

AMERICAN NURSERYMAN

The Nurseryman's Forte: To Make America More Beautiful and Fruitful

JANUARY 1, 1948

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The Nurseryman's Forte: To Make America More Beautiful and Fruitful

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CLOSING DATE—Copy for the January 15 issue must reach this office by January 5.

—50 YEARS—

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AMERICAN NURSERYMAN

F. R. KILNER, *Editor and Publisher*
Joan L. Kilner, *Assistant Editor*

Editorial

FOR A HAPPY NEW YEAR.

As each new year commences it has long been the custom to make plans and resolutions for the ensuing twelvemonth. In addition to giving thought to later undertakings, the nurseryman may well begin this new year with action that will the sooner benefit himself, his employees and his customers.

With the fall planting and shipping completed and the time to begin spring operations still in the offing, tasks and plans that must go neglected during busier months can now be accomplished. The number of trade conventions held throughout the country during the winter months offer fine opportunity for making new contacts and renewing old acquaintances with fellow nurserymen, as well as for gaining new ideas from the educational programs offered at these various meetings. During the off season the mailing list and other records can be brought up to date; inventory of office supplies and equipment can be made and needed items restocked; machinery, other equipment and supplies for the nursery can be repaired and replenished; attention can be given to making the nursery's buildings and grounds more attractive; a better advertising program can be outlined; personnel can be improved, and management made more efficient.

With his business in good order, the nurseryman may well look forward to the happy and prosperous year that is our sincere wish for all our readers.

OUTLOOK FOR 1948.

A continuing boom throughout 1948 for virtually every American industry is the prediction of the United States Department of Commerce, even though it cautiously acknowledges the possibility of upsets due to the international situation. This differs with forecasts made but three months ago by economists that a mild business depression will arrive by spring. The United States Department of Commerce, on the other hand, sees demand for steel and automobiles continuing high, with new production facilities increasing the supply. It sees other industries thriv-

The Mirror of the Trade

ing on both pent-up and current demand, with current employment levels remaining high. In fact, some government officials look for an even tighter labor situation by spring, even though unemployment is now at what is considered a rock-bottom figure.

While other industries continue to enjoy prosperity and national income, and liquid savings remain at peak, the nursery industry, too, can look forward to another good year. Although some kinds of nursery stock which have been scarce for some time are becoming more plentiful, supply is still behind demand. As home building increases, demand for the nurseryman's products should likewise increase. Nursery stock prices have not risen in proportion to prices of other items, so that any marked trend to buyers' resistance should not be too strongly felt in the trade.

Provided he is not affected by any acute labor shortage, the nurseryman who offers good stock coupled with first-rate service and who operates his business efficiently should have every reason to be optimistic about the year ahead.

PLANT NOMENCLATURE.

Nurserymen, horticultural editors and others who have need of some standard of plant nomenclature to which to refer will welcome the A. A. N. plan for the registration of all new woody plants, exclusive of fruits and roses, which is described on another page of this issue.

Since most of the new introductions of woody plants in the past couple decades have been hybrid and selected varieties, rather than species, and there has been no single clearinghouse for the registration of woody plants, questions have been raised as to the correctness of name and truthness to name of some nursery items. There has been considerable confusion created by the different listings of the same plant, as is well illustrated in the following letter from W. R. Hoots, superintendent of grounds, college of agriculture and engineering of the University of North Carolina, Raleigh:

"In studying and buying plants from nurserymen, I find that there is a lot of inconsistency in variety names; in fact, this inconsistency seems to exist among most horticulturists. If possible, I would like to get at the source of correct classifica-

tion of plants as used by the trade. For example, one nurseryman may list holly as *Ilex burfordi*, *Ilex crenata*, *Ilex rotundifolia*, while another may list the holly as *Ilex burfordi*, *Ilex crenata rotundifolia*, *Ilex cornuta burfordi* and *Ilex crenata microphylla*. In other words, I may order *Ilex crenata* and get several varieties.

"Who makes the decisions in setting up the botanical names of plants sold by nurserymen and how could I get some reliable literature on this subject?

"Several veterans are taking horticultural work courses here at the college, and we would like to make the course as practical and usable as possible."

While the minor shortcomings of "Standardized Plant Names" are well known, it has been found both possible and practicable to follow this volume in so far as it goes. One cannot but have admiration for such monumental works as Rehder's "Manual of Cultivated Trees and Shrubs," Bailey's "Cyclopedia" and "Hortus," but it has been difficult to reconcile plant names through them without reaching a state of confusion.

If the A. A. N. registration plan for woody plants is accurately carried out, if nurserymen and other introducers of new plants cooperate by prompt registration of new plants and if an annual listing of new introductions can be made available, this plan may well be a means for avoiding further confusion and for keeping the trade up to date on plant nomenclature. And further, if complete and accurate records of origin and introduction are maintained and are readily available for compilers and editors of works on plant nomenclature, a complete authoritative standard may the sooner result.

STEVE DODD, son of Tom Dodd, Tom Dodd Nurseries, Semmes, Ala., is now employed at the Sarver Nursery, Dallas, Tex.

DR. PHILIP GARMAN, entomologist at the Connecticut agricultural experiment station, was presented with the 1947 certificate of distinction awarded annually by the Connecticut Pomological Society for "outstanding achievement and meritorious service in the field of pomology" at the society's annual dinner, which was held December 11 at the Hotel Bond, Hartford.

Record Wisconsin Meeting

By Thomas S. Pinney, Secretary

A record attendance marked the opening of the thirty-first annual convention of the Wisconsin Nurserymen's Association, which was held December 3 and 4 at the Hotel Schroeder, Milwaukee.

Edwin R. Eschrich, Milwaukee; R. C. Pippert, Cleveland, and Thomas S. Pinney, Sturgeon Bay, were reelected president, vice-president and secretary-treasurer, respectively, of the association. L. L. Kumlien, Janesville, and Willard Dustrande, Hartland, were elected to the board of directors to fill the places vacated by Herbert Trautman and C. H. Schultz, whose terms have expired.

President Eschrich declared in his opening address that nurserymen were rapidly gaining the confidence of the public because they were giving better service and producing higher-quality products. He stated that the primary purposes of the association were to promote the welfare of its members, to improve conditions in the industry and to serve the public intelligently and efficiently.

The morning program for the first day's session was devoted entirely to association business. Inasmuch as the convention of the American Association of Nurserymen will be held at Milwaukee this year, considerable time was spent on matters pertaining to the meeting. Jess Foster, of Holton & Hunkel Co., announced that his firm is planning to have a barbecue for the A. A. N. members July 19 and that the Wisconsin members as well as all nurserymen in the state are cordially invited to attend.

In place of the usual program at the luncheon, which began promptly at noon and adjourned at 12:45, a tour was made of the Milwaukee sewerage disposal and fertilizer plant, the only one of its kind in the country. Chartered busses left the hotel promptly at 1 p. m., and after a short ferry trip across the water to Jones island, the members arrived at the plant where they were divided into two groups. A most interesting and instructive hour was spent visiting the entire plant, and the groups were shown how the sewerage is treated, dried and processed and put up in fertilizer bags. Almost 200 tons of fertilizer are produced each day.

At 2:30 p. m. the program was resumed at Hotel Schroeder by A. D. Slavin, chief of the regional nursery division of the soil conservation

service, who presented an interesting and instructive talk on soil management. He stated that a soil-building program must be established to save our soil from further soil erosion and depletion. According to Mr. Slavin, nothing has been found to surpass sod for soil building and both alfalfa and brome grass have been found to be excellent. He stated that at the present time there are over forty states with soil conservation and soil-building programs.

E. L. Chambers, chief of the state department of entomology, presented



Edwin R. Eschrich.

a talk entitled "The Eternal Bug Battle," with the assistance of members of his staff. Mr. Chambers mentioned various brands of new insecticides that are rapidly appearing on the market and stated that by the time his department had an opportunity to give them a fair test, something new was being offered, so that it was extremely difficult to make intelligent recommendations. However, he declared that nurserymen were rapidly getting the better insecticides because of the new compounds developed during the war. He reported that the inspection service in the state in the early days was inadequate and of little or no value, but that with the appearance of San Jose scale thorough inspection service became necessary, and a department of entomology was established. H. E. Halliday, also of the department of entomology, discussed gladiolus insects and diseases and stated that gladiolus pests were increasing. He declared that if gladioli were to be grown in increasing

quantities in Wisconsin, better pest controls would have to be inaugurated. P. W. Smith, of the department of entomology, discussed the grasshopper and corn borer situation, pointing out that the former pest will be a serious threat in 1948 because of the present heavy egg pods in the soil, which will develop in 1948 if conditions are dry and favorable. On the other hand, he stated that corn borer larvae were also plentiful and would also develop with cool moist weather. Thus he predicted that Wisconsin will be heavily infested next summer either by grasshoppers or corn borer, depending upon the type of weather prevailing.

E. L. Chambers was toastmaster at the banquet Wednesday evening. Held in the Pere Marquette room of the hotel, the dinner was sold out completely, and a few latecomers had to be turned down. Edgar Doudna, Madison, was the guest speaker, and his unusual dry humor and refreshing wit made his 45-minute talk seem to last only a few moments. His subject was "Preserving Our Heritage." Entertainment included dinner music, vocal numbers and a performance by a ventriloquist.

The program was opened Thursday morning with a discussion of the coming A. A. N. convention, presented by Richard P. White, executive secretary of the A. A. N. Mr. White stated that the A. A. N. was one of the two oldest trade associations in the country and that the meeting at Milwaukee in July would be the seventy-third annual convention of the association. He stressed the fact that the success of the convention depends upon the cooperation of everyone and reported that committees were already being appointed and the work outlined. In addition to the usual entertainment, a special program is being arranged by the committee for ladies and children.

Mr. White also discussed the A. A. N. trade promotion program and declared that it would not be long before the nursery industry, like many others, will be in a buyers' market and that nurserymen should begin now to prepare for such a situation. He said that beneficial results of the trade promotion program are already appearing. Close cooperation with all regulatory government departments has also been carried out

[Concluded on page 55.]

AMERICAN ASSOCIATION OF NURSERYMEN

RICHARD P. WHITE,
EXECUTIVE SECRETARY



636 SOUTHERN BLDG.,
WASHINGTON, D. C.

REGISTRATION OF NEW WOODY PLANTS.

The American Association of Nurserymen has announced that it is now ready to engage in the registration of all new woody plants, exclusive of fruits and roses. Roses are registered by the American Rose Society, Harrisburg, Pa., and all fruit and nut varieties are registered by the division of pomology of the University of California, Davis, Cal.

The A. A. N. hopes to compile and maintain a complete file on each new woody plant originating or introduced in the United States, with the exceptions noted, since and including the year 1930, to continue such records and to make them freely available to all. At the present time, aside from roses, fruits and nuts and certain herbaceous plants, no formal complete registry of other woody plants is maintained, and it is this need which the A. A. N. hopes to fill.

As pointed out by J. Franklin Styer, chairman of the A. A. N. plant nomenclature committee, in his report at the association's convention last July, a woody plant, once introduced, usually remains in commerce a long time, during which time its origin may be forgotten and other clones may become confused with it and sold under its name. While in the past the pertinent information has usually been available in the libraries of various institutions, the multiplicity of introductions and the very size of the nursery industry work against that chance in the future. The institutions are also becoming more specialized and less likely to be interested in a complete record. All these factors in the situation point out the need of a permanent registration office which is always in touch with the entire nursery industry.

In order that the plant registration program will be clear-cut and practical, the A. A. N. has limited to the simplest possible listing the information to be supplied by the introducer; in particular it has avoided data referring to critical estimation of new varieties. Registration cards, one of which is reproduced on this page, may be secured from the A. A. N. on request. All nurserymen who have originated or introduced new woody plants since 1930 are asked to write

for cards, fill them out and mail them to the American Association of Nurserymen, 636 Southern building, Washington 5, D. C.

Upon receipt of the registration card which has been filled in with the necessary data from a nurseryman, institution, government agency or individual which expects to make or has made the introduction, the A. A. N. office would check the name for practical conformity to botanical nomenclature and for possible duplication before officially registering the new plant.

Mr. Styer also proposed in his report that the registrations received each year be published annually in an appropriate manner. Horticultural editors, amateur organizations, institutions and others could subscribe to such a bulletin and would be kept up to date on new plants and their introducers, from whom they could obtain further information.

In order further to publicize the register, the association is seeking societies, state agricultural experiment stations, arboreta and trade and garden publications.

CANADIAN IMPORT RESTRICTIONS.

Nursery stock is not included in the list of commodities to which recently imposed Canadian restrictions

apply, the December 11 newsletter of the American Association of Nurserymen reports. The Canadian government was confronted with an adverse trade balance, and for some weeks it has been rumored that all items not essential to the Canadian economy would be prohibited entry. The list and restrictions have now gone into effect, and while they apply to cut flowers and cut foliage as well as non-horticultural items, regulations on the import of nursery stock were not changed. The office of the Division of Plant Protection, of which W. N. Keenan, Ottawa, is chief, will continue "to issue permits covering importations of any plant material for propagation purposes from the United States in accordance with the prevailing regulations under the destructive insect and pest act."

THE Joseph Breck & Sons Corp., Boston, Mass., was among eighty firms awarded a certificate of public service for fifty or more consecutive years of service to the American consumer by the Brand Names Foundation, Inc., New York city, at a dinner November 25 at the Statler hotel, Boston.

GUESTS were given rosebuds at the opening of the Blackburn Nursery & Flower Shop, 622 North Montgomery street, Clarksville, Ark. Operated by Mr. and Mrs. Dean W. Blackburn, the new firm consists of a 2-story building, in which the shop is located, and an adjacent 22x50-foot greenhouse. Mr. Blackburn is a graduate of the University of Arkansas and received his doctor's degree at the University of Wisconsin.

AMERICAN ASSOCIATION OF NURSERYMEN, INC. REGISTRATION OF NEW PLANT

Genus	Species	(or most resembled species in hybrid; or hybrid group). Variety or Subspecies (if Latin name)
English or Common Name		
Seedling of	Sport or strain of	
Hybrid of	and	
Originated at	Date selected or discovered	
Originator	Address	
Introducer	Address	
Plant Patent No.	Date	Assigned to
Name Trademarked: Date	Trade Mark No.	Year Introduced
The plant may be distinguished from other varieties (species) by the following characteristic features which to the best of my knowledge represent a new and distinct variety:		
Zones or limits of hardiness		
Adaptation to soils or location		
Signed		Introducer or Originator
FOR WOODY PLANTS EXCLUSIVE OF ROSES		

Form to Be Used for Registration of New Woody Plants by A. A. N.

Early Wisconsin Nurserymen

By L. L. Kumlien

First let me say I am not a newcomer to Wisconsin. I was born here, and my father and mother were both natives of Wisconsin. One of my grandfathers was among the first children born in Rock county in 1839. My paternal grandfather landed here at Milwaukee from Sweden in 1843. He made his way on foot sixty miles to the shores of Lake Koshkonong where he built a log cabin and reared his family. He was among the pioneer naturalists of Wisconsin and he spent the last years of his life as one of the first employees of the Milwaukee Museum. A letter in my family was delivered to him in the wilds of Wisconsin in 1845 with the streamline address, "Wisconsin Territory, U. S. A."

Thus you can see my roots are in Wisconsin, and after thirty-five years away from home, I have returned with the firm conviction that Wisconsin is a great state.

Recently I was discussing the prospects for fall crops with my mother, who is now well past 80. Some people were talking of a crop failure last fall, but the remark she made has come to me many times. She said, "I have lived in Rock county for over eighty years, and there has never been a crop failure."

Agriculture is diversified in Wisconsin, and there are many industries which help to stabilize the business of the state. We have a more balanced economy because of the wide variety of industries, and there is a greater measure of security year in and year out than you will find in sections of the country which depend on one crop or one great industry.

The dairy business alone in Wisconsin is something that goes on every day of the year in good times and bad, and nurserymen who cultivate the farmers' business know they are good customers.

As I appear before this meeting, it comes to my mind that the first national convention I attended was here at Milwaukee thirty-two years ago next summer. A lot of water has gone under the bridge since then.

The history of nurserymen in Wisconsin and elsewhere for that matter might have been written much differently if they had learned to lean with the wind.

First portion of an address presented by L. L. Kumlien, Kumlien Nursery, Janesville, Wis., at the recent convention of the Wisconsin Nurserymen's Association, at the Schroeder hotel, Milwaukee.

The topic assigned to me was "Wisconsin Nurserymen," a subject which allows almost any interpretation, but I shall try to outline briefly what I believe happened to many of those nurserymen of days gone by who did not lean with the wind. They passed out of business because they failed to change with the times.

Right in my own neighborhood of Milton, Wis., where I grew up, there were in times past at least three fairly large thriving nurseries. Yet not a trace now remains of any of them, except for a few large evergreens and shade trees in some semblance of nursery rows.

At Janesville, where I now operate the only nursery, there were, in the year 1851, five nurseries doing business.

I should like to quote from the printed records of the Rock County Agricultural Society a description of the nursery industry at Janesville at that time, which was nearly a century ago. Here are some interesting facts relating to those five firms:

"E. B. & J. F. Drake: 1,000,000 apple trees, 15,000 pear trees, 1,000 cherry trees and also ornamental shrubbery of various kinds.

"Colby & Willey: 6,000 pear trees, 6,000 cherry trees, 10,000 evergreens, 400 varieties of ornamental shrubs and shade trees and a large stock of apple trees. They intend to plant two bushels of apple seeds this present spring.

"G. J. & S. H. Kellogg: 75,000 apple trees, 2,000 cherry trees and an assortment of grapes, currants and gooseberries; 2,000 roses of eighty varieties, 1,000 pie plants and 1,000 ornamental shrubs of various kinds.

"Loudon & Robinson: 150,000 apple trees, 1,000 pear trees and 5,000 plums.

"Francis Dano: 20,000 apple trees.

The total sales of these nurseries for the year was reported as \$11,800—and that was in times when a dime was a lot of money.

I am sorry I do not know what varieties of apples, pears, plums and other fruits were being grown, but it is noticeable that fruit trees were of prime importance. Evergreens were also grown extensively, perhaps largely for windbreaks. However, at the old home where I was reared, there are two Norway spruces, planted about 1855, and at my grandfather's farm there are hemlocks, white pines and spruces, planted about 1850, which may also have

come from one of those Janesville nurseries. Not one of the nurseries remains, although one firm, the Kellogg nursery, did not disappear entirely until about twenty years ago.

Why did all of these firms go out of business? It is easy for us to look back over the past 100 years and have a clear view of the changing times. In order to get a perspective of the nursery business in those times, we must remember that Wisconsin was then new country. My grandfather's people came from New York state in 1838, when Janesville had only a couple of log houses. By 1850 settlers were coming in large numbers; the population of the state was then 305,000. Rock county had but 1,700 inhabitants in 1840 and 21,000 ten years later.

When the new settlers took up the land they wanted fruit trees and windbreaks. Much of the country surrounding Janesville is treeless prairie; so the settlers bought shade trees also. Some of the more substantial people from the more settled eastern states wanted flowers and roses and some atmosphere of refinement. One of these men was J. F. Willard (the father of the famous Frances Willard), who was president of the Rock County Agricultural Society in 1851. He included the following remarks in his president's address:

"It should be the design of everyone who owns a homestead to make it in the highest degree pleasant and agreeable to himself and family. Around our homes should our endearments be concentrated, should that home be the humblest cabin, the plain cottage or stately mansion.

"Nothing adds more to the external appearance of our homes than a little taste displayed in the setting out and careful training of a few shrubs and plants. The most humble cabin on the prairies with its doorway covered with the grapevine and the honeysuckle, with here and there a climbing rose, with a few fruit-bearing trees, presents a pleasing and homelike association to the passer-by."

Let us remember this was written just before the coming of the railroads. All merchandise was hauled overland from lake ports in wagons. Sometimes the dirt roads were not passable, either. Janesville was a beehive of local manufacturing, with five flour mills, several sawmills, sash

and door mills, woolen mills, brick yards, a shoe factory, harness makers, butchers, tailors and even farm machinery manufacturing. In fact, almost all merchandise was made locally.

Soon the land was all taken up. The big demand for fruit trees was over. In 1852 the railroad came, and local manufacturing declined. Merchandise was made elsewhere in large factories and shipped to towns like Janesville.

Our nursery friends might have taken a tip from Mr. Willard, changed over to ornamentals and put on a selling campaign to beautify town and country homes.

Here and there a nursery did lean with the wind and stayed in business. One of the five I mentioned previously survived for many years, but was caught later in changing conditions and went out of business.

Those nurseries which survived in the latter part of the nineteenth century discovered that they had to send out agents to contact customers. Transportation was slow and difficult, so that selling nursery stock through the canvass prospered for a generation. Then it began to decline. The most recent report I have seen shows that only about five per cent of all nursery stock is now sold in this way.

Many of the old firms failed to see the change coming in the distribution of nursery stock. They tried to retain the old system while the world moved on. Other firms leaned with the wind and remained solvent and prosperous.

Another epoch, which, of course, was not sudden or universal, was the bonanza market of estates and park development. For many years men of wealth took to the country. They wanted finished landscapes of full-grown trees. Money was no object. Many nurserymen near large cities catered to this market. In a few years came high income taxes and difficulties with domestic help, and the decline was on.

I can name a dozen large nurseries that went out of business when this market almost vanished. Some were million-dollar firms, which might have survived. Some firms leaned with the changing wind and survived, while others are only memories today.

The time came when the wind shifted abruptly. Instead of the nurseryman's soliciting the customer, the customers began coming to the nursery.

The advent of the automobile, the hard roads, the garden clubs and the shorter working hours with more time for leisure, all contributed to the development of the small local nursery, which is now the order of the day.

NEW SALES BUILDING.

Expected to be completed for opening in early spring, the new nursery sales building, of which the architect's sketch is reproduced on this page, is being constructed by the W. A. Natorp Co., Cincinnati, O., at the firm's No. 2 nursery, located on Montgomery road. The building is two-thirds finished now.

The main building consists of a lath house, 70x140 feet and twelve feet high, constructed of steel and aluminum, with wood lath for shading. The grounds will be attractively landscaped, and parking space will be provided for thirty cars. In the rear center of the lath house a 2-story building will be erected; the floor level is to be used for sales, display and office space and the upper part for storage.

For the past two years W. A. Natorp, president of the firm, has traveled extensively through California and the east, and an effort has been made to incorporate the best features of the nursery sales grounds he saw.

The W. A. Natorp Co., which has its main office at 4400 Reading road, Cincinnati, operates five nurseries in the vicinity of Cincinnati. The firm is a member of the Ohio Nursery-

men's Association, the American Association of Nurserymen and the Cincinnati Landscape Association.

Other members of the firm include Thomas B. Medlyn, vice-president and secretary, and H. C. Detmering, assistant secretary and auditor. H. O. Armbruster is superintendent, and A. Bloch is manager of the Montgomery road nursery.

COVER ILLUSTRATION.

Sciadopitys Verticillata.

Sciadopitys verticillata, the umbrella pine, is unique in several respects among the narrow-leaved evergreens. There is nothing else quite like it. Only one species exists, and this has its native habitat in Japan.

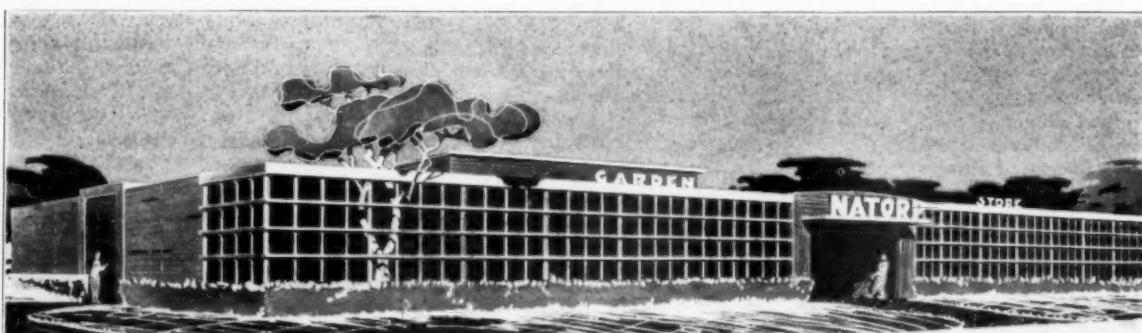
It is pyramidal in its habit of growth, dense and of slow growth. In its native habitat it is said to reach a height of 100 feet or more, but under cultivation in this country it is usually considerably less than half that size.

The leaves on the umbrella pine are of two types. One kind is small and scalelike and often goes unnoticed. The other kind of leaves is from three to five inches long, dark, glossy green above and lighter and with two white bands beneath. These leaves are grooved beneath and emarginate at the top and are borne in whorls.

This evergreen is moderately hardy and appears free from injurious pests. It does best in fairly fertile, well drained soil. Excellent specimens have been seen in the east, especially along the coast, and it is said to do well along the northern Pacific coast. It does not do well in the midwest, and it is seldom that large specimens are seen. This may be due to a temperature factor.

Where the umbrella pine does well, it will make an attractive specimen, border or group plant. L. C. C.

KARSETH HANSEN has started the Pines Landscape Nursery, Centerville, Utah.



Architect's Drawing of New Nursery Sales Building Being Constructed by W. A. Natorp Co., Cincinnati, O.

Cold Storage of Nursery Stock

Numerous materials have been used by nurserymen in the construction of cold-storage rooms, such as hollow tile, cement blocks, cinder blocks and brick. In the data gathered by the American Nurseryman no one reported the use of wood, except in the ceiling or roof. One nurseryman said he used a steel frame and built the walls of cinder blocks. Another reinforced the block frame with precast cement girders. Several used a combination of materials, such as brick outside and hollow tile inside. A cheaper but apparently satisfactory combination used by others was cement blocks outside with cement or stone wallboard inside.

A successful cold-storage building erected in 1946 by C. R. Burr & Co., Manchester, Conn., has double cinder block walls with a 10-inch void between. The outside walls are constructed of 6x8x16-inch cinder blocks and the inner wall of 4x8x16-inch cinder blocks. These two walls are tied together, both horizontally and vertically, with $\frac{1}{8}$ -inch tie rods every five feet. The space between the walls is filled with fine regranulated cork. A noteworthy feature of this building is that the inner wall is extended down to the footing two and one-half feet below the top of the foundation. In this manner the insulation is carried below the floor level to provide a thermal seal for the floor insulation.

Some cold storages have been built with gable roofs, but most nurserymen have preferred the flat roof construction. Kelly Bros. Nurseries, Dansville, N. Y., used steel beams to support the roof of its cold storage, thus doing away with supporting posts.

The data received seem to indicate that a wide range of materials is satisfactory for building cold storages. The final choice will depend upon availability and cost.

Before starting to build a cold storage, one should know exactly how he is going to provide insulation. "Insulation is ninety per cent of the problem," says Harold Welch, Mount Arbor Nurseries, Shenandoah, Ia. "You must have insulation not only on the roof and side walls, but also on the floor."

On this particular phase of cold storage there has been a great deal of research and from it considerable experience. The advice of refrigeration engineers should be sought before construction begins.

Many kinds of materials are being

used for insulating nursery cold-storage buildings, including sawdust, wood chips, coal cinders, peat, rock wool, balsam wool, mica, fiber glass, asbestos, ground cork and sheet cork.

Some insulation is provided by the air spaces in hollow tile and concrete and cinder blocks. Double wall construction with an air space between the walls is even better, but more expensive. Neither type of construction is satisfactory without supplementary insulation.

Materials such as peat, sawdust and wood chips have a tendency to settle when used for wall insulation, thus leaving areas at the top of the walls unprotected. Another objection to these materials is their disposition to absorb moisture, which not only reduces their insulation value, but hastens the decay of any wood with which it may come in contact. Comparatively heavy masses of peat, sawdust and wood chips must be used to make them effective; usually from ten to fourteen inches. In general, results from these have not been satisfactory.

Balsam wool has been used for insulation by several nurserymen with gratifying results. It is said not to deteriorate, dry out or burn. It is used in varying thicknesses from eight to eighteen inches.

Another comparatively new material being used by some nurserymen to insulate cold-storage rooms is fiber glass. This comes in varying thicknesses and is easy to apply.

Most refrigeration engineers agree that sheet cork is the best material to use for insulation. In fact, it is the standard by which the effectiveness of other insulating materials is measured. Four inches of corkboard are recommended for temperatures at 20 to 30 degrees Fahrenheit and three inches for temperatures of 35 to 45 degrees. Because most nurserymen prefer the lower temperatures, the 4-inch insulation should be used. The best insulation becomes valueless when saturated with water, and waterproof barriers should be provided to protect the walls, floors and ceilings.

As a rule, it is better to have more than the required amount of insulation than it is to have too little. Although outdoor temperatures may vary widely from day to day and from one section of the country to another, refrigeration engineers do not advise the use of less insulation in one locality than in another.

Corkboard four inches thick is

equal to six inches of ground cork. Ground cork has the further disadvantage of settling out of place. While sawdust and shavings are fair insulators and inexpensive, a layer ten inches thick is required to equal the heat-retaining ability of about two and one-half inches of corkboard.

Do not forget that the ceilings and floors must be insulated as efficiently as the walls. Usually the ceiling can be insulated in the same manner as the walls. The floors present a different problem because they must be hard-surfaced. The standard method of insulating floors recommended by refrigeration engineers is to lay four inches of concrete, then four inches of corkboard and finally four inches more of concrete.

One nurseryman reported that he did an effective job on his floor by pouring a 2-inch slab of concrete, which was waterproofed with a tar emulsion and heavy building paper. On top of this he used eight inches of concrete aggregate insulation, which is very light. Mixed with cement and water, it makes a solid floor after two inches of regular concrete are poured on top to make a smooth and hard surface.

The floor of the cold-storage building of C. R. Burr & Co., referred to previously, is insulated with twenty-four inches of well packed soft coal cinders with a 4-inch concrete wearing floor laid over the cinders. The inner walls of the storage building, it will be recalled, extend down to the footing, thereby thermally sealing the floor insulation. This method of floor insulation, which has very nearly the insulating value of four inches of corkboard, decreases insulation costs in materials and through the elimination of a base floor.

Because it is not practical to light cold-storage rooms with windows, provision must be made for artificial light. Several nurserymen have recommended the use of moistureproof wire and fixtures. Two firms reported that they were changing from ordinary electric light to fluorescent light because they believed the latter would be less costly if left on all day than the other snapped on and off each time one entered and left the cooler.

The type and capacity of the cooling equipment chosen will depend upon what is to be accomplished. Temperatures recommended for the storage of nursery stock vary from

28 to 38 degrees F. The majority thought it was best to store the stock as near freezing as possible without actually freezing it. Holding the stock at a temperature slightly below freezing will not hurt it, but if shipments must be made at frequent intervals, it is better to hold the stock at just above freezing, instead of alternately freezing and thawing it.

After deciding at what temperature one wishes to hold his storage room, he should present full information to the company from which he plans to purchase the cooling equipment. The firm will need to know the dimensions of the building or room, the exact manner and amount of insulation and lowest temperature to be maintained. The season during which the storage is to be operated will also have to be taken into consideration. A storage that is operated only during the winter months will not need so heavy equipment as one that is to be operated the year around.

The linear dimensions of the building affect the degree of heat leakage. A. D. Sullivan, chief engineer for the Brunner Mfg. Co., Utica, N. Y., stated as follows:

"Consider two buildings, each twelve feet high inside; one of floor area 40x60 feet, the other 30x80 feet. The outside linear dimensions of these buildings will be as above, plus about one foot for the insulation and supporting structure. The 40x60-foot building has an outside area of 7,658 square feet; the 30x80-foot building, 7,926 square feet of outside surface. Applying constants for a 4-inch thickness of insulation and considering a temperature difference of 90 (outside) minus 33 (inside) degrees Fahrenheit, a refrigerating unit with a capacity of 72,500 B.T.U./hr. will be required. Based on a 16-hour per day running time, the 30x80-foot room will require a condensing unit capacity of 75,000 B.T.U./hr., because of the additional outside surface."

In the example given above, a 7½-horsepower, water-cooled unit is indicated. This machine requires about 6.4 kilowatts of electricity, which, at the rate of one cent per kilowatt-hour, would amount to \$1.02 per day, operating sixteen out of the twenty-four hours. It would require also about 1,080 gallons of 75-degree-Fahrenheit water per day, of sixteen hours' operation. Colder water, if available, will reduce the expenditure and vice versa."

Be sure that enough water and electric power are available. Consult the power company to determine if

[Concluded on page 56.]

G. N. MOYER FETED BY NEW INDIANA GROUP.

A group of Indiana nurserymen assembled December 2 at Laketon, Ind., at the home of George N. Moyer, Indiana's oldest nurseryman, in celebration of his eighty-seventh birthday and the completion of his sixty-seventh year as operator of the Laketon Nurseries.

After extending felicitations to Mr. Moyer the group drove to the Laketon United Brethren church and enjoyed a well prepared fried chicken banquet. Mr. Moyer was superintendent of the Sunday school of the church for more than forty years. After the banquet, each person rose



George N. Moyer at 87.

and in turn cited many of the achievements of the honored guest.

One of the outstanding achievements of Mr. Moyer was his development, about fifty years ago, of the Moyer's Prize apple, a yellow-skinned fruit of superior quality. The flesh is white, the flavor is similar to the summer McIntosh apple and the fruit is rather large and almost seedless. It is a good keeper and ripens in late October.

Mr. Moyer addressed the group and spoke of the changes that have occurred since he launched the Laketon Nurseries on November 1, 1880, after having gained considerable knowledge of propagation and the growing of fruit stocks from his grandfather, Jesse Moyer, who established northern Indiana's oldest nursery in 1833. From 1895 to 1910 the Laketon Nurseries were the largest shippers of fruit stocks in Indiana.

AMERICAN NURSERYMAN

Mr. Moyer advised all persons under the sound of his voice to consult the Bible frequently and to read verses eleven, twelve and thirteen of the first chapter of Second Timothy and to "keep close to shore." He said that he was now completing the reading of the Bible through for the fifth time. He asserted that he has fifty-four descendants, "at the last counting."

Many gifts were received by Mr. Moyer, including scarves, books and eighteen cut E. G. Hill roses.

New Association Formed.

The nurserymen present organized the North Central Indiana Nurserymen's Association, electing Robert C. Hoffman, of Wabash, president, and John W. Moyer, Laketon, secretary-treasurer, for the first six months of 1948. At the next meeting, in February, rules and bylaws will be considered, a membership committee appointed, dues levied and organization completed.

The February meeting is to be held at the Wabash Country Club, and the program is scheduled to include 20-minute talks. Ralph Oyler will speak on filing federal income tax returns, Ray Price will discuss newer and better varieties of landscape materials and suggest types for discarding and Byron Traster will outline advertising methods and sales promotion.

Those attending the birthday celebration for Mr. Moyer and present at the organization meeting, in addition to the honored guest, were Robert C. Hoffman, Wabash; Carl J. Moldenhauer and Earl Moldenhauer, Huntington; R. G. Reece, Laketon; Harry White, Columbia City; Ray L. Price, Plymouth; Mr. and Mrs. Raymond Schmidt, Marion; Byron Traster and Alfred Roth, Fairmount; Ralph P. Oyler and Albert Limbaugh, Syracuse, and John W. Moyer, Laketon.

Byron S. Traster.

POTENT NEW INSECTICIDE.

Development of a powerful new insecticide, known as thiophos 3422, described by a company spokesman as "five to twenty-five times as potent as DDT," has been announced by the American Cyanamid Co. Dr. Bruce D. Gleissner, research entomologist, said that the degree of potency of the new compound over DDT "depends on the type of insect it is used against."

He added that "thiophos 3422 is the most uniformly toxic compound that has been developed" and has a wider range of effectiveness than any other chemical now in practical use.

Evergreen Euonymus

By George Graves

The wintercreepers are so well established in landscape planting that the name shuffling to which they were subjected a few years ago was accomplished with a minimum of complaint. As is usual in such cases, more than a name change was involved. A study was made of the plants themselves, going all the way back to a specimen which Robert Fortune collected in China in 1845. Turczaninow, a Russian botanist, named this plant of Fortune's *Elaeodendron fortunei*. Later, another European, Handel-Mazzetti, determined rightly that it belonged in the genus *euonymus*. However, he referred it mistakenly to *E. kiautschovicus*. It remained for E. D. Merrill to recognize that Fortune's *euonymus* was identical with what we have known as *E. radicans acutus*. This last was collected in China by E. H. Wilson in 1907 and named by Rehder. Therefore, *E. radicans acutus* became *E. fortunei* by reason of priority. The rules demanded the change.

This process of untangling resulted in the sharpleaf wintercreeper—the type which is wild over much of China—becoming the subject head under which are now indexed the other expressions of the species. This Chinese type is a somewhat thin-stemmed ground cover having relatively long, narrow, pointed leaves. In the open, it is a free-spreading, mat-forming plant, which roots down as it reaches out for more soil to blanket, and under such culture it is less likely than the smaller-leaved variants to display the humps marking the original plant centers. When tree trunks or other supports are encountered it can become a root climber. In gardens, however, it does not show the same easy disposition to climb as does the Japanese type, *E. fortunei radicans*.

Differing little from the type is *E. f. coloratus*, which is becoming the more popular of the two in gardens. This form, which is distinguished by its reddish-purple winter color, is not known in the wild. All plants have come from a seedling which appeared among the progeny of a seed collection made in Shensi, China, by F. N. Meyer in 1914. Like the type, it is shade-tolerant, but under darkened conditions it cannot be expected to color up so well as when fully exposed.

The smaller-leaved Japanese vari-

ety, *E. f. radicans*, was introduced to cultivation about 1865—twenty years after Fortune's collection—and until now it has been looked upon as being the type of the species. Although its name is familiar, it has lost popularity to other more gardenesque varieties and forms. Like the English ivy, it bears its flowers and seeds on specialized branches, and its fruiting wood differs from the sterile vegetative growth in having noticeably larger leaves and a more shrubby aspect. The formation of these fruiting branches seems, as in the ivy, to take place only after the climbing growth has reached the limits of the support on which it finds itself. Also, as with the ivy, cuttings may be rooted from the fruiting branches and established as independent specimens, though they are not complete plants; when set in the open, they usually remain shrubby.

If suitable support is available, these fruiting plants do, at times, give rise to climbing shoots, and this second climbing growth (like that of ivy) is sometimes distinct from the first in appearance. Thus, by selective propagation, a single seedling may be made into three plants of differing aspect, and if variegated shoots are present, it is possible to make more than three. Among them is the fruiting variety, *E. f. vegetus*, known as the bigleaf wintercreeper, introduced in 1876. Although it can become a root climber, it is usually seen as a shrubby ground cover, as the foundation of low-clipped hedges, or as independent plants facing off groupings of larger shrubs. Its bittersweet-like fruits give it much decorative interest. Its relatively large, round leaves make it an effective broad-leaved evergreen.

It is on the heavy-stemmed bigleaf wintercreeper that the *euonymus* scale insect is most troublesome. In most cases the infestations are not noticed until the branches of the plants are white with scales. Such advanced attacks are difficult to control. Theoretically, these insects should succumb to repeated applications of contact insecticides during the early and late summer. One suggestion of some years' standing is an early spring spray of dormant oil of three per cent strength. This may be followed up by two sprays at 10-day intervals during the hatching period in June. For these June sprays, the

recommendation is one per cent summer oil combined with forty per cent nicotine sulphate, 1 to 800. In mixing, it should be remembered that the same water figures in the dilution of the two different chemicals at the different ratios stated. Two similarly spaced applications of the same summer combination should be put on in August to interfere with the comfort of a later hatching. All spraying must be done with extremely high-pressure equipment, or following a vigorous syringing with the garden hose. More recently, an insecticide called Styx has been offered as lethal to *euonymus* scale insects. In practice, their elimination is not accomplished so simply. Cutting back and complete renewal of infested growth have been resorted to when sprays have failed. One important precaution is to buy no plants which show infestation.

Another fruiting form, also of evident derivation from the Japanese type, is *E. f. carrierei*, the glossy wintercreeper, introduced to gardens in 1881. Of the two, this is the more permanently shrubby. It has equally large leaves, which are longer, narrower and more shining than those of *E. f. vegetus*. In gardens, it fruits much less profusely than does the bigleaf wintercreeper. But for covering a low wall or as an independent shrub in light shade it is hard to beat. One of its common habits is the production of variegated-leaved shoots, which have often been propagated as independent plants. The clone Silver Queen is doubtless of such origin. Other variegated forms of the Japanese type are lumped together under two headings. *E. f. reticulatus* takes care of those with white variegation along the veins of the leaves. Those with white, yellow or pink leaf margins are tumbled into *E. f. gracilis*. Thus are two groups of inconstant and ill-defined forms classified.

A still finer-branched, smaller-leaved, less vigorous seedling form is *E. f. minimus*, baby wintercreeper, introduced, apparently, by a French nurseryman in 1912. Much like it is the yet tinier-leaved *E. f. kewensis*, which is reputed to have reached Kew from Japan through Prof. C. S. Sargent in 1893. Neither of these little plants shows much inclination to climb, and as a result they are restrict-

[Continued on page 59.]

Plant Notes Here and There

By C. W. Wood

A letter from a reader in which he complains about lack of success in growing anemones from seeds prompts a few general observations on that subject and a few specific words on some of the species.

Propagation of Anemones.

In the dim past, when I first became intensely interested in gardening, windflowers, with one or two exceptions, were little known in this country, and conditions are only slightly improved today. The reason or reasons for this deplorable state of affairs are not apparent unless it is true, as some observers have intimated, that we are too indolent to attempt anything so arduous as the lesser-known anemones are likely to be. It may be, as others have pointed out, that the lack of showiness in many of the species has had some influence in our neglect of these plants, but I am not ready to believe that American gardeners are so slightly appreciative of unobtrusive beauty. Be that as it may, our negligence has kept us from enjoying a most entrancing group of plants and has delayed the coming of the day when we can move up among the world's best gardeners.

I would rather think that such discouraging words of our horticultural writers as "collecting anemones has become a matter of hazard and chance" (referring to the hardships put on gardeners by the plant quarantine), have been the retarding factor. When one of our recognized authorities tells us that "occasionally we are careful and patient enough to win some success with seed," is it any wonder that we give up without trying? One need not be discouraged, though, for the situation is not half so bad as pictured.

Anemone seeds belong to that class of leisurely folk of which those gardeners despair who cannot get out of the habit of planting all their seeds in spring. It is natural, of course, to wait until spring to do one's sowing when the planting urge is a part of the season, but the gardener who delays the planting of windflowers until then is quite sure to have to wait an entire year before he sees any of his anemone babies; on the other hand, fresh seeds planted in an outdoor frame in autumn usually come up freely the following spring. I have grown many of the species from seeds during the past and found them

no more tedious or difficult than a host of other tardy kinds.

A trick which I discovered by accident years ago I think will be found of value for securing good germination of seeds with feathery awns, or appendages, a character possessed by all members of the pulsatilla group. Instead of planting these feathery kinds in a horizontal position, which one is quite sure to do because it is the easiest way, plant the seeds upright with part of the awn extending above the surface, for they will not only germinate better, according to my experience, but they will do it more expeditiously.

Although vegetative reproduction calls for stock plants with which to begin operations, it is by far the best method of increasing one's supply of selected forms and is the only sure way by which to multiply named varieties. Division of the roots is the simplest form of this propagating method, but is usually restricted to the kinds with tuberous roots, most of which make naturally divisible root parts. That, I have found, is best done in spring before active growth commences, growing the divisions along in pots until they are strong enough to put in the open.

In the case of fibrous-rooted kinds with more or less fleshy roots, including all the pulsatilla group and the Japanese anemones, root cuttings are preferred by most experienced propagators. The work may be done in spring or autumn, preferably the latter if greenhouse facilities are available, although early spring work gives good results. Dig the plants, cutting the fleshy roots into 2-inch lengths, and plant them in furrows in flats of sandy soil, covering the pieces with about an inch of the same compost. Keep them fairly moist in a cool place until top growth of two inches or more has been made, when they may be planted out three inches apart in a frame or potted up singly in 3-inch pots, depending on the outdoor weather, until they are large enough to be transferred to their permanent quarters.

Another question on Anemone apennina and its close relative, *A. blanda*, may be covered at this time.

Although I am especially fond of both these southern Europeans, they, and particularly the Grecian *blanda*, sometimes perish during one of our cold winters here in northern Michigan, but they are able to stand much

more cold than their southern homes would indicate and flourish hearteningly when once established. Give the *A. apennina* a shady spot and the kind of soil which naturally goes with a woodland planting, and it will brighten the early spring scene with its large sky-blue flowers (an inch or more across), spreading into ample patches as time goes on. Like many of the tuberous-rooted kinds, it has the disconcerting habit of dying down soon after flowering, leaving bare patches in the landscape if companions have not been provided to fill in the void. That is of less consequence, though, than a similar occurrence would be in a more conspicuous spot.

Its relative, *A. blanda*, is quite similar, having the same stature of five or six inches and somewhat similar leafage, but its flowers are larger and deeper in their blue shade. Soft pink and white, as well as white with blue-backed petals, are sometimes available. It is said to be a child of open rocky places in its native land, indicating the necessity of sunshine for its well-being in our gardens, and we find that such is actually the case to a certain extent, although partial shade seems to make it better satisfied with life here in the middle west.

Coreopsis Rosea.

For years *Coreopsis rosea* was seldom, if ever, mentioned by my correspondents, but in the past few years it averages several appearances annually. It all indicates an interest in a fascinating plant and tells me that a few words about the plant and its culture would not be out of place at this time.

Even though the plant may have attracted some attention recently, it is still to be put in the unusual class. It may be common enough in its range along our Atlantic coast, but it apparently does not extend far into the interior, and it is rarely seen in gardens. And if it behaves elsewhere as it did here, I can understand why gardeners do not use it more than they do. A plant has to be outstandingly good to cause the average gardener to go to the trouble of renewing it as often as this short-lived composite requires. One cannot deny, however, that the plant has much to recommend it, including a long blooming period, from July into September, good color in its rosy-pink flowers, the suitable height of a foot or less for inclusion in many garden arrangements and a rather feathery

SOME UNSOLD ITEMS

EVERGREEN SEEDLINGS

	Per 100	Per 1000
8000 <i>Abies douglasii</i> , 2-yr. S, 4 to 7 ins.	\$ 4.50	\$ 35.00
500 <i>Chamaecyparis lawsoniana</i> , 2-yr. S, 4 to 6 ins.	6.00	50.00
800 <i>Mahonia aquifolia</i> , 2-yr. T, 4 to 6 ins.	12.00	100.00
12,500 <i>Picea canadensis albertiana</i> , 3-yr. S, 3 to 5 ins.	4.00	30.00
8000 <i>Picea excelsa</i> , 2-yr. S, 3 to 6 ins.	4.50	35.00
6000 <i>Picea pungens</i> , 2-yr. S, 3 to 6 ins.	5.00	40.00
700 <i>Pinus ponderosa</i> , 2-yr. S, 2 to 4 ins.	5.00	40.00
800 <i>Pinus sylvestris</i> (Herbst Special), 2-yr. S, 4 to 8 ins.	6.00	50.00

EVERGREEN TRANSPLANTS for LINING OUT

	Per 100	Per 1000
950 <i>Juniperus communis depressa</i> , 2-yr. T, 3 to 6 ins.	\$ 9.00	\$ 80.00
250 <i>J. communis depressa plumosa</i> , 3-yr. TT, 10 to 15 ins.	35.00	300.00
850 <i>J. communis hibernica fastigata</i> , 2-yr. T, 12 to 18 ins.	30.00	250.00
600 <i>J. communis suecica nana</i> , 2-yr. T, 6 to 12 ins.	30.00	250.00
400 <i>J. excisa stricta</i> , 3-yr. TT, 12 to 18 ins.	40.00	350.00
125 <i>J. glauca betzii</i> .	SORRY, all sold	
250 <i>J. sabina</i> , 3-yr. TT, 8 to 12 ins.	35.00	300.00
3000 <i>Picea canadensis albertiana</i> , 3-yr. T, 4 to 7 ins.	10.00	80.00
1700 <i>Picea engelmanni</i> , 5-yr. T, 5 to 7 ins.	12.00	100.00
500 <i>Picea engelmanni</i> , 6-yr. T, 8 to 12 ins.	15.00	125.00
5100 <i>Picea excelsa</i> , 4-yr. T, 6 to 9 ins.	12.00	100.00
2450 <i>Picea excelsa</i> , 4-yr. T, 9 to 12 ins.	15.00	125.00
325 <i>Picea excelsa</i> , FR, TT, 18 to 24 ins.	50.00	400.00
100 <i>Retinospora filifera aurea</i> , 2-yr. T, 6 to 12 ins.	30.00	.....
300 <i>Retinospora plumosa lutescens</i> , 2-yr. T, 4 to 6 ins.	25.00	200.00
400 <i>Taxus baccata repandens</i> , T, 6 to 10 ins.	30.00	250.00
9100 <i>Taxus cuspidata</i> (spreading), 2-yr. T, 6 to 10 ins.	27.50	225.00
15,050 <i>Taxus cuspidata</i> (spreading), 2-yr. T, 10 to 15 ins.	35.00	300.00
650 <i>Taxus cuspidata capitata</i> , 2-yr. T, 8 to 12 ins.	45.00	.....
3500 <i>Taxus media andersonii</i> , 2-yr. T, 6 to 10 ins.	27.50	225.00
3600 <i>Taxus media andersonii</i> , 2-yr. T, 10 to 15 ins.	30.00	300.00
3750 <i>Taxus media andersonii</i> , 2-yr. T, 12 to 15 ins.	30.00	350.00
975 <i>Taxus media hickoryi</i> , 2-yr. T, 6 to 10 ins.	30.00	250.00
1200 <i>Taxus media hickoryi</i> , 2-yr. T, 10 to 15 ins.	37.50	325.00
550 <i>Taxus media pyramidalis</i> , 2-yr. T, 6 to 10 ins.	35.00	300.00
750 <i>Taxus media wardii</i> , 2-yr. T, 6 to 10 ins.	35.00	.....
950 <i>Thuja occidentalis</i> , T, 8 to 12 ins.	15.00	130.00
650 <i>Thuja occidentalis</i> , T, 12 to 15 ins.	20.00	175.00
200 <i>T. occidentalis conica densa</i> , 2-yr. T, 6 to 9 ins.	27.50	225.00
150 <i>T. occidentalis Douglas Golden</i> , 2-yr. T, 6 to 12 ins.	27.50	.....
250 <i>Thuja occidentalis</i> , Hetz's midget, 2-yr. T, 2 to 4 ins.	22.50	.....
100 <i>T. occidentalis nigra</i> , 2-yr. T, 6 to 12 ins.	27.50	.....
3175 <i>T. occidentalis pyramidalis</i> , 2-yr. T, 8 to 12 ins.	27.50	225.00
200 <i>T. occidentalis recurva</i> , 2-yr. T, 6 to 10 ins.	27.50	225.00
250 <i>T. occidentalis recurva nana</i> , 2-yr. T, 5 to 8 ins.	27.50	225.00
200 <i>T. occidentalis reidi</i> , 2-yr. T, 5 to 8 ins.	27.50	225.00
150 <i>T. occidentalis rosenthalii</i> , 2-yr. T, 6 to 10 ins.	30.00	.....
275 <i>T. occidentalis wareana</i> , 2-yr. T, 6 to 12 ins.	27.50	225.00
1100 <i>T. occidentalis woodwardi</i> , 2-yr. T, 6 to 8 ins.	27.50	225.00
1300 <i>Tsuga canadensis</i> , 4-yr. T, 6 to 10 ins.	35.00	300.00
2725 <i>Tsuga canadensis</i> , 5-yr. T, 10 to 15 ins.	45.00	400.00

ORNAMENTALS for LINING OUT

S—Seedlings. T—Transplants. RC—Rooted Cuttings.

DECIDUOUS TREES

	Per 100	Per 1000
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125 <i>Castanea mollissima</i> , T, 12 to 18 ins.	\$ 35.00
1150 <i>Castanea mollissima</i> , T, 18 to 24 ins.	60.00	\$ 500.00
4150 <i>Cornus florida</i> , 1-yr. S, 8 to 12 ins.	5.00	40.00
800 <i>Ginkgo biloba</i> , 1-yr. S, 10 to 15 ins.	12.00	100.00
850 <i>Ginkgo biloba</i> , 1-yr. S, 18 to 24 ins.	27.50	225.00
750 <i>Ginkgo biloba</i> , T, 2 to 3 ft.	30.00	250.00
75 <i>Ginkgo biloba</i> , T, 4 to 5 ft.	60.00	.....
50 <i>Ginkgo biloba</i> , T, 5 to 6 ft.	75.00	.....
850 <i>Populus Lombardy</i> , RC, 2 to 3 ft.	7.50	60.00
900 <i>Populus Lombardy</i> , RC, 3 to 4 ft.	10.00	85.00
200 <i>Populus simoni</i> , RC, 2 to 3 ft.	7.50	60.00
200 <i>Populus simoni</i> , RC, 3 to 4 ft.	10.00	85.00
85 <i>Quercus bicolor</i> , T, 2 to 4 ft.	35.00	.....
85 <i>Quercus coccinea</i> , T, 2 to 3 ft.	40.00	.....
150 <i>Quercus coccinea</i> , T, 3 to 4 ft.	50.00	.....
65 <i>Quercus prinus</i> , T, 2 to 3 ft.	40.00	.....
50 <i>Quercus prinus</i> , T, 3 to 4 ft.	50.00	.....
325 <i>Quercus rubra</i> , T, 4 to 6 ft.	60.00	500.00
150 <i>Quercus rubra</i> , T, 6 to 8 ft.	75.00	.....
350 <i>Salix dolorosa</i> , RC, 2 to 3 ft.	6.00	50.00
550 <i>Salix dolorosa</i> , RC, 3 to 4 ft.	8.50	75.00
300 <i>Salix salamonic</i> , RC, 2 to 3 ft.	6.00	50.00
300 <i>Salix salamonic</i> , RC, 3 to 4 ft.	8.50	75.00
125 <i>Salix salamonic</i> , RC, 4 to 6 ft.	10.00

SHRUBS

	Per 100	Per 1000
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250 <i>Abelia grandiflora</i> , RC, 6 to 12 ins.	\$ 7.50	\$ 65.00
1500 <i>Azalea mollis</i> , T, 4 to 8 ins.	25.00	200.00
5000 <i>Berberis thunbergii</i> (5000 for \$30.00), S, 3 to 6 ins.	2.00	12.50
68,000 <i>Berberis thunbergii</i> (5000 for \$100.00), S, 6 to 9 ins.	3.00	22.50
11,000 <i>Berberis thunbergii</i> , (5000 for \$150.00), S, 9 to 12 ins.	4.00	32.50
82,000 <i>Berberis thunbergii atropurpurea</i> , S, 3 to 6 ins. (25,000 up, \$22.00 per 1000; 5000 for \$117.50.)	3.50	27.50
300,000 <i>Berberis thunbergii atropurpurea</i> , S, 6 to 9 ins. (25,000 up, \$37.50 per 1000; 5000 for \$200.00.)	5.00	42.50
90,000 <i>Berberis thunbergii atropurpurea</i> , S, 9 to 12 ins. (25,000 up, \$70.00 per 1000; 5000 for \$375.00.)	8.75	80.00

We specialize in Red Barberry.

It is very carefully color rogued and well graded.

	Per 100	Per 1000
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975 <i>Daphne mezereum</i> , 2-yr. S, 3 to 6 ins.	6.00	50.00
4450 <i>Forsythia spectabilis</i> , very heavy RC, 12 to 18 ins.	5.50	45.00
650 <i>Lonicera fragrantissima</i> , RC, 12 to 18 ins.	6.00	50.00
950 <i>Lonicera korolkowii</i> , RC, 12 to 18 ins.	6.00	50.00
800 <i>Lonicera xylosteum</i> , RC, 8 to 16 ins.	6.00	50.00
8000 <i>Rosa multiflora</i> , S, 12 to 18 ins.	3.00	25.00
2300 <i>Rosa rugosa</i> , S, 6 to 10 ins.	3.50	25.00
5900 <i>Rosa wichuraiana</i> , S, 6 to 12 ins.	3.50	25.00
4850 <i>Rosa wichuraiana</i> , S, 12 to 18 ins.	5.00	40.00

SHRUBS—Cont.

	Per 100	Per 1000
200 <i>Spiraea froebellii</i> , RC, 8 to 12 ins.	\$ 6.00	.....
2400 <i>Symporicarpus chenaultii</i> , RC, 12 to 18 ins.	4.50	\$ 35.00
2800 <i>Symporicarpus vulgaris</i> , RC, 12 to 18 ins.	3.50	25.00
1150 <i>Tamarix africana</i> , RC, 12 to 24 ins.	5.00	40.00
225 <i>Viburnum sargentii</i> , S, 4 to 8 ins.	4.00	30.00
530 <i>Weigela</i> , Abel Carriere, RC, 12 to 18 ins.	8.00	70.00
1300 <i>Weigela hendersonii</i> , RC, 12 to 18 ins.	7.00	60.00
200 <i>Weigela rosea</i> , RC, 12 to 18 ins.	7.00	60.00
2300 <i>Yucca filamentosa</i> , 2-yr. S.	4.00	30.00

VINES

	Per 100	Per 1000
8000 <i>Celastrus scandens</i> , S, 6 to 12 ins.	3.50	25.00
150 <i>Aronia arbutifolia</i> , 2 to 3 ft.	\$ 4.00	\$ 30.00
5200 <i>Berberis thunbergii atropurpurea</i> , 12 to 15 ins.	3.00	20.00
(\$175.00 per 1000.)		
1100 <i>Berberis thunbergii atropurpurea</i> , 15 to 18 ins.	4.00	25.00
(\$225.00 per 1000.)		
2000 <i>Berberis thunbergii atropurpurea</i> , 18 to 24 ins.	4.50	32.50
(\$300.00 per 1000.)		

DECIDUOUS SHRUBS

	Per 100	Per 1000
150 <i>Cornus mas</i> , 4 to 6 ft.	12.50	100.00
75 <i>Cornus mas</i> , 6 to 8 ft.	20.00	175.00
380 <i>Cydonia japonica</i> (Red), 18 to 24 ins.	5.50	40.00
250 <i>Cydonia japonica</i> (Red), 2 to 3 ft.	7.00	55.00
75 <i>Daphne mezereum</i> , B&B, 15 to 18 ins.	12.50	100.00
110 <i>Forstertia fortunei</i> , 4 to 5 ft.	6.00	50.00
1000 <i>Forstertia intermedia</i> , 3 to 4 ft.	4.00	30.00
250 <i>Forstertia spectabilis</i> , 3 to 4 ft.	5.00	40.00
365 <i>Forstertia spectabilis</i> , 5 to 6 ft.	6.00	50.00
1100 <i>Ilex verticillata</i> , 3 to 4 ft.	6.00	50.00
400 <i>Kolkwitzia amabilla</i> , 3 to 4 ft.	7.50	65.00

VINES

	Per 100	Per 1000
6500 <i>Ligustrum amurense</i> , 18 to 24 ins.	\$ 10.00	\$ 80.00
5000 <i>Ligustrum amurense</i> , 2 to 3 ft.	12.50	100.00
2000 <i>Ligustrum Ibillium</i> , 18 to 24 ins.	10.00	80.00
2400 <i>Ligustrum Ibillium</i> , 2 to 3 ft.	12.50	100.00
250 <i>Ligustrum Ibotae</i> , 2 to 3 ft.	14.50	120.00
(Per 1000 for 1000.)		
1300 <i>Lonicera morrowii</i> (Red-fruited), 3 to 4 ft.	\$ 5.00	\$ 40.00
90 <i>Lonicera yunnanensis</i> (Evergreen), 12 to 18 ins.	4.50	35.00
310 <i>Rhodotypos kerrioides</i> , 3 to 4 ft.	5.50	45.00
55 <i>Rhus aromatica</i> , 18 to 24 ins.	4.00	30.00
110 <i>Rhus hirsutissima</i> , 2 to 3 ft.	5.00	40.00
140 <i>Rosa rugosa</i> , 2 to 3 ft.	6.00	50.00
600 <i>Rosa setigera</i> , 2 to 3 ft.	4.00	30.00
600 <i>Rosa setigera</i> , 3 to 4 ft.	5.00	40.00
6000 <i>Rosa wichuraiana</i> , 2 to 3 ft.	5.00	50.00
550 <i>Rosa wichuraiana</i> , 3 to 4 ft.	6.00	50.00
5500 <i>Rosa</i> (various), 2 to 3 ft.	5.00	50.00
5500 <i>Rosa</i> (various), 3 to 4 ft.	6.00	50.00
5500 <i>Rosa</i> (various), 4 to 5 ft.	7.00	70.00
5500 <i>Rosa</i> (various), 5 to 6 ft.	8.00	80.00
5500 <i>Rosa</i> (various), 6 to 8 ft.	9.00	90.00
5500 <i>Rosa</i> (various), 8 to 10 ft.	10.00	100.00
5500 <i>Rosa</i> (various), 10 to 12 ft.	11.00	110.00
5500 <i>Rosa</i> (various), 12 to 15 ft.	12.00	120.00
5500 <i>Rosa</i> (various), 15 to 18 ft.	13.00	130.00
5500 <i>Rosa</i> (various), 18 to 24 ft.	14.00	140.00
5500 <i>Rosa</i> (various), 24 to 30 ft.	15.00	150.00
5500 <i>Rosa</i> (various), 30 to 36 ft.	16.00	160.00
5500 <i>Rosa</i> (various), 36 to 42 ft.	17.00	170.00
5500 <i>Rosa</i> (various), 42 to 48 ft.	18.00	180.00
5500 <i>Rosa</i> (various), 48 to 54 ft.	19.00	190.00
5500 <i>Rosa</i> (various), 54 to 60 ft.	20.00	200.00
5500 <i>Rosa</i> (various), 60 to 66 ft.	21.00	210.00
5500 <i>Rosa</i> (various), 66 to 72 ft.	22.00	220.00
5500 <i>Rosa</i> (various), 72 to 78 ft.	23.00	230.00
5500 <i>Rosa</i> (various), 78 to 84 ft.	24.00	240.00
5500 <i>Rosa</i> (various), 84 to 90 ft.	25.00	250.00
5500 <i>Rosa</i> (various), 90 to 96 ft.	26.00	260.00
5500 <i>Rosa</i> (various), 96 to 102 ft.	27.00	270.00
5500 <i>Rosa</i> (various), 102 to 108 ft.	28.00	280.00

growth, which helps to relieve the stiffness in its neighborhood. There is no way to escape the fact, however, that it is short-lived and has to be renewed frequently. At least that has been my experience.

C. rosea is a moisture-lover, being found in a natural state in "sandy grassy swamps and shores," according to Gray's "Botany." I have tried to overcome its needs for these conditions by growing it in shade, hoping that the absence of sunshine would compensate for the lack of an abundance of moisture, but it does not bloom freely unless it has the kiss of the sun. I sometimes think that if I should try it again I would give it an acid diet. I cannot say from experience what its longevity would be if it were given an always moist situation, as it has in nature, for there is nothing like that in my dry garden, but friends tell me it is short-lived even under those conditions. Luckily, though, it is not hard to propagate from cuttings taken in early summer and not allowed to bloom the first year.

Handling Western Irises.

The literature on the west speaks in enthusiastic terms of the gold and silver which have come out of that fabulous country, but seldom does it mention those other precious things, the western American irises. When eastern writers speak of them at all, they generally do so with tongue in cheek, remembering the unpleasant experiences they have had because of the plants' eccentricities. However, experience has taught me that most of the species are quite amenable and will give a satisfactory performance if their needs are supplied, though sometimes the plants are short-lived.

Generally speaking, these plants want some shade in the middle west, a soil rich in leaf mold and a little more moisture than the usual iris. Given these growing conditions and strong nursery-grown plants (collected material is a mighty poor risk and has been the basis of most adverse reports on the plants, I suspect), or perhaps better yet, viable seeds for fall sowing, eastern gardeners should find little trouble in making most of the western irises happy.

Browallia.

The genus *browallia* commemorates the name of John Browall, bishop of Abo, Sweden, a friend of Papa Linneaus. The names given by Linneaus in his early interpretation of the genus follow the course of his relations with the bishop, elata showing the feeling of their early friendship; demissa, its interruption

[Continued on page 57.]

HOT ITEMS FOR SPRING

TAKE CARE OF YOUR REQUIREMENTS NOW

Early placement of orders for Spring delivery removes possibility of disappointment at a later date when stock is all sold.

SHRUBS

	Per 10	Per 100
<i>CYDONIA JAPONICA</i> (Flowering Quince).		
2 to 3 ft. (\$250.00 per 1000)	\$3.50	\$30.00
18 to 24 ins. (\$175.00 per 1000)	2.50	20.00
12 to 18 ins. (\$125.00 per 1000)	1.80	15.00
<i>HYDRANGEA ARBORESCENS GRANDIFOLIA</i> ,		
2 to 3 ft.	6.00	55.00
<i>HYDRANGEA PANICULATA GRANDIFLORA</i> ,		
2 to 3 ft.	5.50	50.00
<i>PHILADELPHUS VIRGINALIS</i> ,		
2 to 3 ft.	6.00	55.00
<i>PRUNUS BESSEYI</i> (Hansen's Bush Cherry).		
3 to 4 ft., transplants.	4.00	35.00
2 to 3 ft., transplants.	2.90	25.00
<i>BUDDLEIA</i> (Butterfly Bush).		
Charming, Pink,		
No. 1	3.20	28.00
Med.	2.50	22.00
Dubonnet (New). Reddish-purple,		
No. 1	2.90	25.00
Med.	2.40	20.00
<i>SPIRAEA BILLIARDI</i> (Billiard Spirea).		
2 to 3 ft.	3.50	30.00
18 to 24 ins.	2.50	22.00
<i>TAMARIX AFRICANA</i> ,		
2 to 3 ft.	3.50	30.00
18 to 24 inches	2.50	22.00

ORNAMENTAL TREES

	Per 10	Per 100
<i>HOPA CRAB</i> . Pink flowers in spring.		
5 to 6 ft.	\$ 7.50	\$ 70.00

	Per 10	Per 100
<i>CUTLEAF WEEPING BIRCH</i> ,		
6 to 7 ft.	22.50	200.00
5 to 6 ft.	17.50	165.00

	Per 10	Per 100
<i>GLOBE LOCUST</i> . Dense round heads; formal, 6-ft. stems	\$20.00	\$175.00

	Per 10	Per 100
<i>NORWAY MAPLE</i> , 6 to 8 ft.	\$17.50	

	Per 10	Per 100
<i>ROSE ACACIA</i> . Standards. (<i>Robinia hispida</i>).		
5 to 6-ft. stems.	\$20.00	\$175.00
4 to 5-ft. stems.	17.50	150.00
3 to 4-ft. stems.	15.00	135.00

	Per 10	Per 100
<i>THORN, PAUL'S SCARLET</i> , 4 to 5 ft.	\$15.00	

VINES

	Per 10	Per 100
<i>BOSTON IVY</i> , (<i>Parthenocissus Tricuspidata</i>).		
3-yr., No. 1	\$3.50	\$30.00
2-yr., No. 1 (\$220.00 per 1000.)	2.90	25.00
2-yr., Med.	2.10	18.00

	Per 10	Per 100
<i>GOLDFLAME HONEYSUCKLE</i> , No. 1.	4.50	40.00

	Per 10	Per 100
<i>POLYGONUM AUBERTI</i> (<i>Silver-lace vine</i>).		

	Per 10	Per 100
No. 1 (\$270.00 per 1000.)	3.50	30.00

	Per 10	Per 100
<i>WISTARIA, PURPLE</i> . Grown from blooming wood,		

	Per 10	Per 100
No. 1	2.90	25.00

	Per 10	Per 100
Med. (\$150.00 per 1000.)	2.40	20.00

MISCELLANEOUS

	Per 10	Per 100
<i>AUSTRIAN COPPER ROSE</i> . One of the oldest roses in cultivation. Introduced in 1596. Single flowers, intensely coppery-red on one side, bright golden-yellow on the other.		
Per 10 Per 100		

	Per 10	Per 100
No. 1	\$6.50	\$60.00

	Per 10	Per 100
Medium (No. 1½)	4.50	40.00

	Per 10	Per 100
<i>BLEEDING HEART</i> (<i>Dicentra spectabilis</i>).		

	Per 10	Per 100
3 to 5-eye.	\$4.50	\$40.00

	Per 10	Per 100
<i>EARLY HARVEST BLACKBERRY</i> .		

	Per 10	Per 100
No. 1	\$4.00	\$35.00

	Per 10	Per 100
No. 2	3.00	25.00

	Per 10	Per 100
RHUBARB (<i>Victoria</i>). Whole roots,		

	Per 10	Per 100
1 to 1½-in.	5.50	45.00

	Per 10	Per 100
½ to 1-in.	4.00	35.00

	Per 10	Per 100
½ to ¾-in.	3.00	25.00

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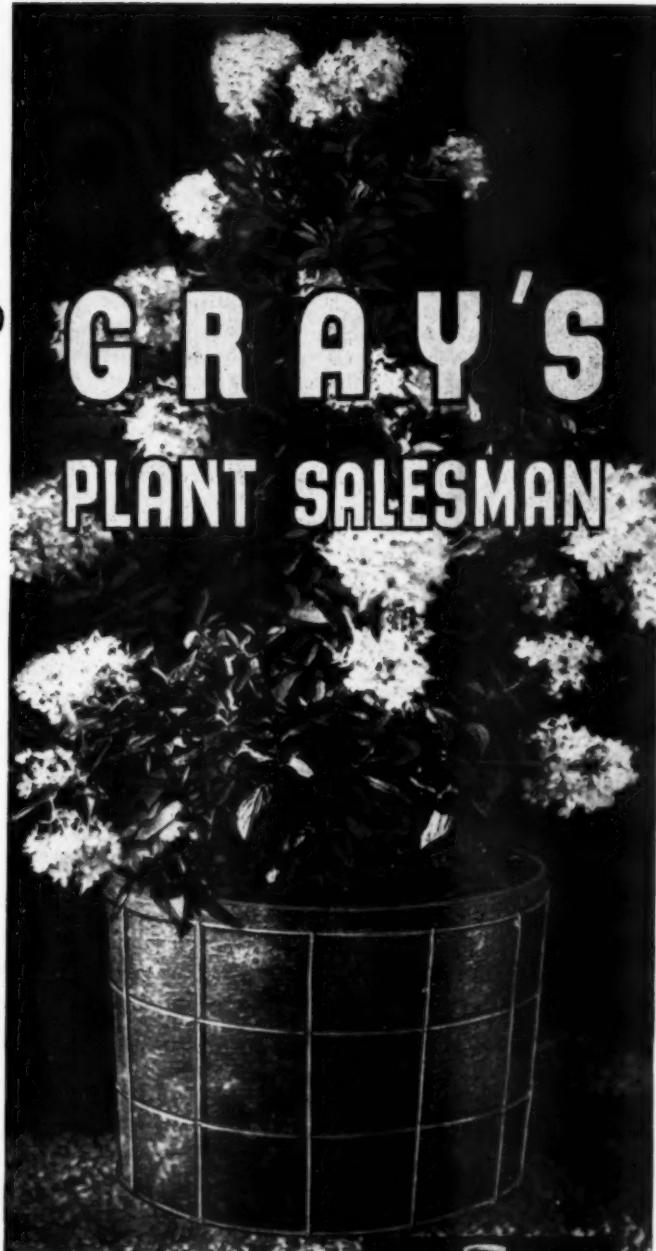
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7217 DIVISION STREET
RIVER FOREST, ILLINOIS

Propagation under Fluorescent Light

Insulated opaque structures offer many advantages in the rooting of cuttings, if suitable artificial light can be supplied at reasonable cost. Accurate temperature control is assisted at all seasons of the year, and the cost of heating is greatly reduced. The humidity can be maintained at a high level without mechanical apparatus. The construction cost of such structures can be relatively low, and space can be saved by the vertical tiering of the plants, since artificial light sources are used. Light of any desired spectral quality may be applied, and the periods of illumination may be regulated precisely.

Even specially constructed glass cases placed in greenhouses do not eliminate completely rapid fluctuations in relative humidity or in temperature which are due to solar radiation. Obviously, the maintenance of uniform, well controlled conditions within conventional greenhouses demands elaborate and costly air-conditioning equipment.

In contrast, the relative humidity within a semiunderground opaque propagating house used at the United States plant introduction garden at Glenn Dale, Md., fluctuates only slightly. The insulation of this structure was not perfect, and some daily fluctuations of temperature occurred. However, these did not reduce the relative humidity, which remained near saturation. Wetting of the walks or walls was not needed to maintain this high value.

During the winter, some intermittent heating with a small 1-kilowatt electric heater was necessary. This caused slight reductions in the relative humidity, but had little, if any, significance from a practical standpoint.

Several different types of opaque propagating cases using fluorescent lamps as an exclusive light source have been constructed at the plant introduction garden at Glenn Dale. The simplest type consisted of a flat-topped frame covered with glazed sash or with a glass substitute, with a fluorescent lamp. Perhaps the most satisfactory type for rooting cuttings was cases made in lengths from four to seven feet and in widths from two

Abstracted from a paper presented at the 1946 meeting of the American Society for Horticultural Science, at St. Louis, Mo., on "Rooting Cuttings and Germinating Seeds under Fluorescent and Cold Cathode Lighting," by V. T. Stoutemyer and Albert W. Close, United States Plant Introduction Garden, Glenn Dale, Md.

to three feet. One or two doors hinged at the top were provided for the front of the cases. Soil-heating cables, thermostatically controlled, were preferred for supplying bottom heat to the rooting medium. The use of materials for the walls having good insulation values was found to aid the operation greatly, since condensation on the inner surfaces of the walls was reduced, thereby increasing the atmospheric humidity.

One case was arranged in vertical tiers. The rooting medium was placed in metal flats for removal and convenient handling when setting or removing cuttings. A case of this type was constructed in which the heat of the lamp was conserved to provide bottom heat for the rooting medium above. This arrangement makes possible a great saving in space.

The rooting medium is highly important for success with this type of propagation and must combine good water retention with adequate aeration. The value of expanded vermiculite as a rooting medium has been demonstrated previously. The house insulation grade, preferably with some of the coarser materials screened out, was used. Vermiculite should be watered several times a day before

using, as the pore spaces fill rather slowly. The light weight of vermiculite also makes it advantageous for use with trays or flats in a tiered arrangement. The drainage is excellent with vermiculite.

A mixture of two parts of peat moss and one part of vermiculite has produced exceptionally heavy rooting of acid soil plants such as azaleas. Peat moss alone or shredded sphagnum moss, when carefully watered, has given excellent results, but rooting has generally been inferior with sand.

In this system of propagation, the watering needed has often been so infrequent that the advantages of automatic watering are doubtful. However, three different systems were tried with vermiculite, but experimentation is insufficient to permit an unqualified recommendation.

The miniature propagating cases and also larger opaque chambers when operated carefully have given results which consistently equal those obtainable in elaborate and expensive propagating houses. Although in some instances the rooting was superior in the greenhouses, the opposite was often true. Cuttings of various types of citrus were rooted in two weeks, and cuttings of carnations and

LINING-OUT EVERGREENS

	Per 100	Per 1000
<i>Juniperus horizontalis plumosa</i> (Andorra Juniper), 2-yr., from 2½-in. rose pots.....	\$20.00	\$175.00
<i>Picea glauca densata</i> (Black Hill Spruce), 6 to 8 ins., xx, seedlings.....	22.50	200.00
9 to 12 ins., xx, seedlings.....	27.50	250.00
12 to 15 ins., xx, seedlings.....	32.50	.....
<i>Taxus capitata</i> (Upright Yew), 6 to 8 ins., 2 yr., from 2½-in. rose pots.....	40.00	375.00
9 to 12 ins., xxx, 3-yr., from open beds.....	100.00	900.00
12 to 15 ins., xxx, 3-yr., from open beds.....	150.00	1250.00
15 to 18 ins., xxx, 3-yr., from open beds.....	185.00	1750.00
<i>Taxus cuspidata</i> (Spreading Yew), 2-yr., from 2½-in. rose pots.....	25.00	225.00
9 to 12 ins., xx, 3-yr., from open beds.....	40.00	375.00
<i>Taxus cuspidata intermedia</i> (Intermediate Yew), 2-yr., from 2½-in. rose pots.....	25.00	225.00
<i>Taxus cuspidata thayerae</i> (Thayer's Yew), 2-yr., from 2½-in. rose pots.....	25.00	225.00
<i>Taxus media andersoni</i> (Anderson Yew), 2-yr., from 2½-in. rose pots.....	25.00	225.00
<i>Taxus media brownii</i> (Brown's Yew), 2-yr., from 2½-in. rose pots.....	25.00	225.00
<i>Taxus media hickii</i> (Hicks' Yew), 2-yr., from 2½-in. rose pots.....	25.00	225.00
6 to 9 ins., xx, 3-yr., from open beds.....	32.00	300.00
<i>Taxus media</i> (Anglojap Yew), 2-yr., from 2½-in. rose pots.....	25.00	225.00
50 at 100 rate.	300 at 1000 rate.	
All prices F.O.B. Milwaukee.	Packing at cost.	

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BUNTINGS' NURSERIES, INC., Selbyville, Del.

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YEARLING PEACH TREES

	Each	Per 10	Per 100
1-in. and up, heavily branched	\$1.10	\$9.00	\$80.00
7/8 to 1-in., 6 to 7 ft.	.95	7.50	65.00
11/16 to 7/8-in., 5 to 6 ft.	.80	6.50	55.00
9/16 to 11/16-in., 4 to 5 ft.	.70	5.50	45.00
7/16 to 9/16-in., 3 to 4 ft.	.60	4.50	35.00
5/16 to 7/16-in., 2 to 3 ft.	.50	3.50	25.00
1/4 to 5/16-in., 2 to 3 ft.	.40	3.00	20.00
Belle of Georgia	Golden Jubilee	Rochester	
Brackett	Greensboro	Shipper's Late	
Carmen	Halehaven	Sunhigh	
Crawford's Early	Heath Cling	Summercrest	
Crawford's Late	J. H. Hale	Triogem	
Early Elberta	O'Boy	Valiant	
Elberta	Red Bird Cling	Vedette	
Gage Elberta	Redhaven	White Hale	
Goldeneast			

APPLE TREES

2-year Buds

	Each	Per 10	Per 100
1-in. and up, heavily branched	\$1.10	\$9.00	\$80.00
7/8 to 1-in., 6 to 7 ft.	.95	7.50	65.00
11/16 to 7/8-in., 5 to 6 ft.	.75	6.00	50.00
9/16 to 11/16-in., 4 to 5 ft.	.65	5.00	40.00
7/16 to 9/16-in., 3 to 4 ft.	.55	4.00	30.00
5/16 to 7/16-in., 2 to 3 ft.	.50	3.50	25.00
Anoka	Jonathan	R. I. Greening	
Baldwin	Jonathan, Dbl. Red	Stayman	
Delicious	Lodi	Stayman, Dbl. Red	
Delicious, Dbl. Red	McIntosh	Williams Early Red	
Gravenstein, Red	McIntosh, Dbl. Red	Yellow Delicious	
Grimes Golden	Red Spy	Yellow Transparent	
Hyslop Crab	Rome Beauty	York Imperial	

PEAR TREES

2-year Buds

	Each	Per 10	Per 100
11/16-in. and up, 5 to 6 ft.	\$1.20	\$10.50	\$90.00
9/16 to 11/16-in., 4 to 5 ft.	1.05	9.00	75.00
7/16 to 9/16-in., 3 to 4 ft.	.90	7.50	60.00
Bartlett	Duchess		
Cayuga	Kieffer		
Clapp Favorite	Seckel		

PLUM TREES

2-year Buds

	Each	Per 10	Per 100
11/16-in. and up, 5 to 6 ft.	\$1.20	\$10.50	\$90.00
9/16 to 11/16-in., 4 to 5 ft.	1.05	9.00	75.00
7/16 to 9/16-in., 3 to 4 ft.	.90	7.50	60.00
5/16 to 7/16-in., 2 to 3 ft.	.80	6.50	50.00
Abundance	Stanley		
Burbank	Shropshire Damson		
Fellenberg	Red June		

SOUR CHERRY

	Each	Per 10	Per 100
11/16-in. and up.	\$1.30	\$11.50	\$100.00
9/16 to 11/16-in.	1.20	10.50	90.00
7/16 to 9/16-in.	1.05	9.00	75.00
5/16 to 7/16-in.	.95	8.00	65.00
Montmorency	Early Richmond		
May Duke	English Morello		

SWEET CHERRY

	Each	Per 10	Per 100
9/16 to 11/16-in., 4 to 5 ft.	\$1.25	\$11.00	\$100.00
7/16 to 9/16-in., 3 to 4 ft.	1.10	9.50	85.00
5/16 to 7/16-in., 2 to 3 ft.	1.00	8.50	70.00
Black Tartarian	Napoleon		
Governor Wood	Schmidt's Big.		
Lambert	Yellow Spanish		

FREE PACKING FOR CASH WITH ORDER. Our Fall 1947 Wholesale List offers a complete line of nursery stock. If you did not receive a copy, write us today. When requesting wholesale rates, kindly use your printed stationery. If interested in large lots, kindly submit your list of requirements for special consideration.

GRAPEVINES

Our Grapes have heavy fibrous root systems, with many lengthy canes at the top. Write for prices on large numbers.
CONCORD (blue), **CATAWBA** (mahogany), **NIAGARA** (white):

	Each	Per 10	Per 100	Per 1000
2-yr., No. 1 grade	\$0.25	\$1.75	\$12.00	\$100.00

	Each	Per 10	Per 100	Per 1000
1-yr., No. 1 grade	.20	1.50	9.00	75.00

	Each	Per 10	Per 100	Per 1000
AGAWAM (red), FREDONIA (black), MOORE'S DIAMOND (white), WORDEN (black):				

	Each	Per 10	Per 100	Per 1000
2-yr., No. 1 grade	.25	2.00	15.00	125.00

	Each	Per 10	Per 100	Per 1000
1-yr., No. 1 grade	.20	1.75	12.00	100.00

	Each	Per 10	Per 100	Per 1000
CACO (red), CHAMPAGNE (amber), DELAWARE (red), PORTLAND (white):				

	Each	Per 10	Per 100	Per 1000
2-yr., No. 1 grade	.30	2.25	18.00	160.00

	Each	Per 10	Per 100	Per 1000
1-yr., No. 1 grade	.25	2.00	14.00	120.00

ASPARAGUS ROOTS

Our Asparagus roots have made a very good growth this season. We are the largest growers of Asparagus in the country. Write for special prices on large numbers.

Varieties: **MARY WASHINGTON**, **PARADISE**

	Per 25	Per 100	Per 250	Per 1000
3-yr., heavy No. 1 grade	\$1.25	\$4.00	\$8.25	\$28.00

	Per 25	Per 100	Per 250	Per 1000
2-yr., heavy No. 1 grade	.75	2.50	4.75	16.00

	Per 25	Per 100	Per 250	Per 1000
1-yr., heavy No. 1 grade	.60	2.00	5.00	16.00

RHUBARB ROOTS

Varieties: **VICTORIA**, **MYATT'S LINNAEUS**

	Per 25	Per 100	Per 250	Per 1000
2-in. cal. and up, forcing grade	\$2.75	\$9.50	\$22.50	\$85.00
1 1/2 to 2-in. cal.	2.00	6.50	15.00	55.00
1 to 1 1/2-in. cal.	1.50	4.50	10.00	35.00
5/8 to 1-in. cal.	1.25	3.50	7.50	25.00
1/2 to 5/8-in. cal.	1.00	2.50	5.00	16.00

BERRY PLANTS, No. 1 grade

	Per 10	Per 25	Per 100	Per 1000
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Thorny Boysenberry	\$1.00	\$2.00	\$6.00	\$40.00
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Thornless Boysenberry	1.00	2.00	7.00	50.00
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Lucretia Dewberry	.60	1.25	4.00	30.00
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Cumberland Raspberry	1.00	2.00	6.00	45.00
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Indian Summer Raspberry	1.00	2.00	7.00	60.00
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Latham Raspberry	1.00	2.00	6.00	50.00
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St. Regis Raspberry	1.00	2.00	7.00	60.00
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Sunrise Raspberry	1.00	2.00	7.00	60.00
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Blowers Blackberry	1.00	2.00	6.00	40.00
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Eldorado Blackberry	1.00	2.00	6.00	40.00
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PRIVET HEDGE PLANTS

Our soil and climatic conditions are ideal for the production of good Privet, and we guarantee our stock to be as well grown and developed in grade as any in this country. Write for special prices on large numbers.

CALIFORNIA PRIVET

(Ligustrum ovalifolium)

	Per 10	Per 25	Per 100	Per 1000
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6 to 12 ins., 2 canes or more	\$0.65	\$5.00	\$40.00	
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12 to 18 ins., 3 canes or more	.75	6.00	50.00	
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1/2 to 2 ft., 3 canes or more	.85	7.00	60.00	

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acalypha rooted in ten days and were ready for potting in less than two weeks. Rooting of cuttings of the French hybrid lilac, Mme. Lemoine, was noticed in one week. Cuttings of various hollies, thuas, taxus, retinosporas and various woody plants rooted well. Cuttings of many kinds of florists' plants, including camellias, dahlias, carnations and chrysanthemums, responded well.

Continuous illumination was used in most of these experiments with rooting of cuttings and has given satisfactory results with all of the numerous species used, although in some instances the 16-hour daily illumination was preferable. Continuous illumination is simple and eliminates the need of manual operation or a time switch. The useful life of hot cathode tubes is often lengthened by infrequent starting. On the other hand, the use of shorter photoperiods economizes on electric current.

Since the 3500-degree white tubes were found to be superior for the rooting of cuttings, they were used as the controls or checks in later experiments with lamps of different colors, which were conducted in a semi-underground shed constructed of cinder blocks. This had served originally as a shed for washing and heeling in nursery stock and was ten feet wide and thirty-six feet long. The roof was fairly well insulated. A shaft originally used as a chimney for a heater provided an intake of air. At the opposite end, an electrically driven fan was connected to a time clock, which could be set for any desired schedule.

Conventional greenhouse benches three feet wide were placed along the two walls. The bottoms of the benches were made of quarter-inch hardware cloth over wooden cross stringers. The benches were filled with a medium grade of vermiculite, which was prepared by screening out the larger particles from the house insulation grade with a one-third inch screen. Lead-sheathed soil-heating cables were placed in the rooting medium and were controlled by thermostats to maintain temperatures slightly above 70 degrees Fahrenheit.

Conventional hot cathode fluorescent lamps were used over the benches on one side of this house. The light from the various units was confined to the appropriate section of the propagating bench by means of plywood partitions painted with flat white paint. An industrial-type fixture containing two 40-watt bulbs was suspended over each of the sections.

In the first trials the two parallel 40-watt tubes were only one foot

SPECIMEN EVERGREENS

	Per 10	Per 100
<i>Juniperus virginiana</i> nevins blue, 3 to 3½ ft., xxx.....	\$47.50	\$450.00
<i>Juniperus virginiana</i> nevins blue, 4 to 5 ft., xxx.....	67.50	650.00
<i>Juniperus virginiana</i> nevins blue, 5 to 6 ft., xxx.....	77.50	750.00
<i>Juniperus virginiana</i> canaerti, 2½ to 3 ft., xxx.....	40.00	375.00
<i>Juniperus virginiana</i> canaerti, 3 to 3½ ft., xxx.....	47.50	450.00
<i>Juniperus virginiana</i> glauca (Heavy), 2½ to 3 ft., xxxx.....	42.50	400.00
<i>Juniperus virginiana</i> glauca (Heavy), 3 to 3½ ft., xxxx.....	52.50	500.00
<i>Juniperus virginiana</i> hilli (Heavy), 4 to 5 ft., xxx.....	67.50	650.00
<i>Juniperus virginiana</i> hilli (Heavy), 5 to 6 ft., xxx.....	77.50	750.00
<i>Juniperus virginiana</i> hilli (Heavy), 6 to 7 ft., xxx.....	92.50	900.00
<i>Juniperus keteleeri</i> (Heavy), 5 to 6 ft., xxxx.....	57.50	550.00
<i>Juniperus keteleeri</i> (Heavy), 6 to 7 ft., xxxx.....	77.50	750.00
<i>Juniperus chinensis</i> pfizeriana, 15 to 18 ins., xxx.....	23.50	225.00
<i>Juniperus chinensis</i> pfizeriana, 18 to 24 ins., xxx.....	32.50	300.00
<i>Juniperus chinensis</i> pfizeriana, 2 to 2½ ft., xxx.....	37.50	350.00
<i>Juniperus columnaris</i> viridis, 2½ to 3 ft., xxx.....	40.00	375.00
<i>Juniperus columnaris</i> viridis, 3 to 3½ ft., xxx.....	45.00	425.00
<i>Juniperus columnaris</i> viridis, 3½ to 4 ft., xxx.....	52.50	500.00
<i>Juniperus sabina</i> vasehron, 18 to 24 ins., xxx.....	27.50	250.00
<i>Juniperus sabina</i> vasehron, 2 to 2½ ft., xxx.....	32.50	300.00
<i>Juniperus sabina</i> vasehron, 2½ to 3 ft., xxx.....	37.50	350.00
<i>Taxus cuspidata</i> , 12 to 15 ins., xxx.....	32.50	300.00
<i>Taxus cuspidata</i> , 15 to 18 ins., xxx.....	40.00	375.00
<i>Taxus cuspidata</i> , 18 to 24 ins., xxx.....	52.50	500.00
<i>Taxus cuspidata</i> , 2 to 2½ ft., xxxx.....	72.50	700.00
<i>Taxus cuspidata</i> capitata, 2 to 2½ ft., xxxx.....	72.50	700.00
<i>Taxus cuspidata</i> capitata, 2½ to 3 ft., xxxx.....	95.00	900.00
<i>Taxus cuspidata</i> intermedia, 12 to 15 ins., xxx.....	35.00	325.00
<i>Taxus cuspidata</i> intermedia, 15 to 18 ins., xxx.....	40.00	375.00
<i>Taxus cuspidata</i> nana, 9 to 12 ins., xxx.....	27.50	250.00
<i>Taxus cuspidata</i> nana, 12 to 15 ins., xxx.....	30.00	275.00
<i>Taxus cuspidata</i> nana, 15 to 18 ins., xxx.....	42.50	400.00
<i>Taxus cuspidata</i> hilli, 9 to 12 ins., xxx.....	22.50	200.00
<i>Taxus cuspidata</i> hilli, 12 to 15 ins., xxx.....	27.50	250.00
<i>Taxus cuspidata</i> hilli, 15 to 18 ins., xxx.....	35.00	325.00
<i>Taxus media</i> , 15 to 18 ins., xxx.....	35.00	325.00
<i>Taxus media</i> , 18 to 24 ins., xxx.....	50.00	450.00
<i>Taxus media</i> , 2 to 2½ ft., xxx.....	55.00	525.00
<i>Taxus media</i> browni, 12 to 15 ins., xxx.....	27.50	250.00
<i>Taxus media</i> browni, 15 to 18 ins., xxx.....	40.00	375.00
<i>Taxus media</i> hicksi, 15 to 18 ins., xxx.....	22.50	200.00
<i>Taxus media</i> hicksi, 18 to 24 ins., xxx.....	30.00	275.00
<i>Taxus media</i> hicksi, 2 to 2½ ft., xxx.....	37.50	350.00

Each x means once transplanted.

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Also a good assortment of other Evergreens.

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RHODODENDRON, AZALEA and KALMIA

Offered for Spring '48 shipment in specimen collected plants.

	Per 10	Per 100
<i>Rhododendron Catawbiense</i> , 2 to 3 ft.....	\$27.50	\$250.00
<i>Rhododendron Catawbiense</i> , 3 to 4 ft.....	32.50	300.00
<i>Rhododendron Catawbiense</i> , 4 to 5 ft.....	45.00	425.00
<i>Rhododendron Maximum</i> , 2 to 3 ft.....	25.00	225.00
<i>Rhododendron Maximum</i> , 3 to 4 ft.....	30.00	275.00
<i>Azalea Calendulacea</i> , 2 to 3 ft.....	17.50	150.00
<i>Azalea Calendulacea</i> , 3 to 4 ft.....	22.50	200.00
<i>Azalea Nudiflora</i> , 2 to 3 ft.....	20.00	175.00
<i>Azalea Nudiflora</i> , 3 to 4 ft.....	25.00	225.00
<i>Kalmia Latifolia</i> , 18 to 24 ins.....	20.00	175.00
<i>Kalmia Latifolia</i> , 2 to 3 ft.....	25.00	225.00

WAYNESBORO NURSERIES

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proper application assured with

HUDSON Stauffer KNAPSACK DUSTER

There's extra effectiveness in every pound of dust—when that dust is properly applied. By proper application we mean the uniform distribution of dust on every part of every plant—underside as well as topside of foliage. We mean the application of the proper amount of dust—not too much, not too little. That's the kind of effective, insect-killing, blight-resisting dusting the Hudson Stauffer Knapsack Duster gives.

Thousands of these dusters, as perfected by Hudson, are in service, giving growers a new conception of efficient application. Uniform discharge of dust under perfect control at all times, economical dusting and new ease of operation are the Hudson Stauffer combination that gives dust a chance to do its best work.



H. D. HUDSON MANUFACTURING CO.
Chicago, Illinois

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Just a puff or a blast.
Ideal for spot-dusting of individual plants or fruit...equally efficient for complete coverage of plants...with discharge rate under perfect control always.



Easy to operate. A quick push on the handle is enough to send out clouds of dust. Conveniently located feed lever gives easy control of discharge rate.



Long-Life bellows.
Made of tough, mildew-resistant Dupont material. Flexes easily, instantly for a long life of full efficiency.



Easy to fill—Giant capacity. Built-in scoop on cover makes filling easy. Duster holds 18-20 pounds of average density dust.



TESTED AND PROVED SPRAYERS AND DUSTERS



above the cuttings. Since occasional wilting and bronzing of foliage were noticed immediately under the lamps, the distance was increased to eighteen inches. Because the rooting was improved with this decrease in light intensity, a distance of two feet was tried, with excellent results. This distance was used in many of the later experiments.

Most of the experiments were conducted during the summer, when the temperatures often went somewhat higher than desired. Doubtless a structure completely underground, with improved insulation, would have been preferable. Experiments were continued through the winter of 1945-46, and the amount of heat necessary to maintain satisfactory temperatures was small. Supplementary heat from a small 1-kilowatt electric heater was used after early December, but often this was operated only intermittently. Usually the temperatures ranged from 60 to 65 degrees, but on several subzero nights went as low as 51 degrees. With better insulation even less heat would have been needed. Fan ventilation was not used during the winter.

Tests showed that blue light was generally inferior to 3500-degree white light in rooting cuttings. This explains the superiority of the 3500-degree white lamps over daylight lamps, since the latter contain more of the blue end of the spectrum. The green tubes were superior to the blue and often approached the white lamps in performance. Tests were also conducted with pink, gold, red, soft white and a combination of pink with blue lamps. These tests showed that none of the colors of hot cathode lamps has any definite advantage over the 3500-degree white lamps with respect to the rooting of cuttings.

Cold cathode lighting offers some promising unexploited opportunities in plant experimentation. The range of available colors is large. The tubes are instant-starting and may be used in rapid-flashing operation, and within certain limits, dimming is possible. The deterioration of the tubes or change in spectral quality is extremely slow in this type of tube. The cold cathode tubes have a much greater length of life than hot cathode tubes. Little auxiliary equipment is necessary for series operation, but amateur experimentation should be discouraged with equipment and circuits of this type because of the high voltages required.

With cold cathode lighting, the rooting of cuttings has been invariably outstanding. Remarkably heavy rooting of azaleas was obtained in a

[Continued on page 50.]

KELLY BROTHERS NURSERIES, Inc.

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Dansville, N. Y.

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All Trees graded—ready for immediate shipment.

SOUR CHERRY

1 and 2-yr.

12 to 18 ins.
18 to 24 ins., 5/16-in.
2 to 3 ft., 7/16-in.
3 to 4 ft., 9/16-in.
4 to 5 ft., 11/16-in. and up.

Varieties:

Montmorency, English Morello, Early Richmond.

PLUMS

1 or 2-yr.

12 to 18 ins.
18 to 24 ins., 3/16-in.
2 to 3 ft., 5/16-in.
3 to 4 ft., 7/16-in.
4 to 5 ft., 9/16-in.
5 to 6 ft., 11/16-in. and up.

Varieties:

Abundant, Burbank, Bradshaw, Formosa, Fellenberg, Stanley, Shiro, Shropshire Damson, Santa Rosa, Yellow Egg.

PEARS

2-yr. branched.

12 to 18 ins.
18 to 24 ins., 3/16-in.
2 to 3 ft., 5/16-in.
3 to 4 ft., 7/16-in.
4 to 5 ft., 9/16-in.
5 to 6 ft., 11/16-in. and up.

Varieties:

Bartlett, Cayuga, Clapp Favorite, Beurre d'Anjou, Duchesse, Flemish Beauty, Kieffer, Seckel, Sheldon, Waite, Willard.

SWEET CHERRY

1 and 2-yr. whipped and branched.

12 to 18 ins.	3 to 4 ft.
18 to 24 ins.	4 to 5 ft.
2 to 3 ft.	5 to 6 ft.

Varieties:

Black Giant, Black Tartarian, Gov. Wood, Napoleon, Schmidt's Bigarreau, Windsor.

PEACH

1-yr., 5/16-in.

1-yr., 7/16-in.

1-yr., 9/16-in. and up.

Assortment of leading varieties.

Send your want list for quotations.

John W. Kelly will be at the Illinois State Nurserymen's Association meeting,

January 8 to 12.

MAINE-GROWN

EVERGREEN TREE SEEDLINGS FOR SPRING SHIPMENT

Evergreen tree seed is again becoming more readily available. We can now offer to the trade the following varieties in quantity lots:

MUGHO PINE

2-yr., 2 to 4 inches. Per 1000....\$25.00

BLACK HILL SPRUCE

3-yr., 3 to 6 inches. Per 1000....\$15.00

Our terms are 50% with the order, shipment C.O.D. for balance of order.

WESTERN MAINE FOREST NURSERY CO.
Dept. AN-18 Fryeburg, Maine

ACER PLATANOIDES-NORWAY MAPLES

Look!

Look!

Per 100

6 to 12 ins.	\$ 5.00
12 to 18 ins.	6.00
2 to 4 ft., trans.	13.50
4 to 8 ft., trans.	15.00
5 to 6 ft., trans.	20.00
6 to 8 ft., 3/4 to 1-in. cal.	30.00
6 to 8 ft., 1 to 1 1/4-in. cal.	60.00
10 to 12 ft., 1 to 1 1/4-in. cal.	75.00
12 to 14 ft., 1 1/4 to 1 1/2-in. cal., well branched	150.00
14 to 16 ft., 1 1/4 to 1 1/2-in. cal., well branched	200.00
16 to 18 ft., 1 1/2 to 2-in. cal., well branched	225.00
2 to 2 1/2-in. cal.	225.00

Addition charge of 10% will be added for bailing and shipping. No charge will be made for loading bulk trucks.

When C.O.D. shipment is desired, a cash deposit of 25% must accompany order.

STATE ROAD NURSERY

State and Sprout Rds.

Media, Pa.

WHOLESALE TRADE LIST

Spring 1948

WHOLESALE ONLY

To the trade we offer the following varieties of Small Fruit Plants and Vegetable Roots for delivery any time until the end of the season, which is about June 1. All prices are F.O.B. Bridgman, Michigan, boxing at cost, 250 at 1000 rate unless otherwise stated. Prices subject to change without notice.

Our Firm will be represented at the January meeting in Chicago by A. W. Krieger from January 10 to 15.

GRAPE LINERS Per 1000

Concord, 1-yr., No. 2.....	\$40.00
Concord, 1-yr., No. 3.....	30.00
Niagara, 1-yr., No. 2.....	45.00
Niagara, 1-yr., No. 3.....	35.00
Fredonia, 1-yr., No. 2.....	50.00
Fredonia, 1-yr., No. 3.....	40.00
No. 2, graded, 6-in. top or better and well rooted.	
No. 3, graded, 2-in. top or better and well rooted.	
No orders less than 500 of a variety.	

GOOSEBERRY Each

Downing, 2-yr., No. 1.....	\$0.30
Houghton, 2-yr., No. 1.....	.25
Champion, 2-yr., No. 1.....	.25

CURRENTS

	25 to 100	100 to 250	Each	Each
Wilder, heavy, 3-yr.....	\$0.20	\$0.19		
Wilder, 2-1.....	.15	.14		
Wilder, 1-1.....	.11	.10		

RED RASPBERRIES

	1-yr., No. 1	3/16-in. to 1/4-in.	100 to 1000	
Latham.....		100	1000	
Indian Summer.....	\$6.00	\$50.00		
Chief.....	6.50	55.00		
St. Regis.....	5.00	45.00		

All transplants of above add 1 1/2 cents each.

VEGETABLE ROOTS

VICTORIA RHUBARB-

	100 to 250 to 1000 to 250 1000 5000	Per 100	Per 100	Per 1000
Whole Roots.....	\$8.00	\$7.50	\$70.00	
1 1/2-in. cmd up.....	6.00	5.50	50.00	
3/4 to 1-in.....	5.00	4.50	40.00	
1/2 to 3/4-in.....	4.00	3.50	30.00	

Liners

3/8 to 1/2-in.....	15.00
--------------------	-------

RED RHUBARB DIVISIONS

	Each	Each	Per 100
Canada Red, No. 1 Divisions.....	\$0.40	\$0.35	
MacDonald.....	.30	.25	

Wire or telephone Bridgman 22

BLACK RASPBERRIES

	No. 1 Tips	
Cumberland and Logan.....	100	1000
Morrison (Sold out).....	\$4.50	\$35.00
	6.00	50.00

PURPLE RASPBERRIES

	No. 1 Tips	
Sodus.....	100	1000
	\$6.00	\$50.00

BLACKBERRIES

	No. 1 R.C.	
Eldorado and Alfred, 1-yr., No. 1.....	100	1000
No. 1 Transplants, 2-yr. trans.....	\$4.50	\$35.00
	6.00	50.00

LUCRETIA DEWBERRY

	100	1000
No. 1 tips.....	\$4.50	\$35.00

BOYSENBERRY

	No. 1 Tips	
Common and Thornless.....	100	1000
	\$6.50	\$55.00

BLUEBERRIES

Rubel, Rancocas, Jersey, Adams, Cabot, Concord.	Each
1-yr., 3 to 6 ins.....	\$0.25
2-yr., 6 to 12 ins.....	.50
3-yr., 12 to 18 ins.....	.70
4-yr., 18 to 24 ins.....	1.00

STRAWBERRIES

Prices upon request.

ASPARAGUS

	25 to 100 to 250 to 100 250 1000	Per 100	Per 1000
Paradise and Washington			

3-yr., heavy.....	\$4.00	\$3.50	\$30.00
2-yr.....	2.80	2.30	18.00
1-yr.....	2.20	1.70	12.00

Quantity price upon request.

HORSE-RADISH

	25 to 100 to 250 to 100 250 1000	Each	Per 100	Per 1000
Cuttings, 4 to 5-in.....	\$0.02	\$1.75	\$15.00	
Whole Roots.....	.04 1/2	4.00	35.00	

ASK FOR SPECIAL QUOTATIONS ON QUANTITY

TERMS: 2 per cent discount for payment upon receipt of stock to parties with established credit; or 10 days net. Orders amounting to less than \$5.00, cash with order. C.O.D. orders must be accompanied with 1/3 cash deposit.

KRIEGER'S WHOLESALE NURSERY, Bridgman, Michigan

This Business of Ours

Reflections on the Progress and Problems of Nurserymen

By E. Sam Hemming

TRAINING TREES.

All nurserymen and horticulturists know that by pruning back young trees, particularly fruit trees, to an outside bud they can train them to grow outward into well shaped trees. But I wonder how many know that there is a method by which they can train young lopsided trees and force them into putting out new branches where they want them to grow.

By making a small nick with a sharp knife in the wood and severing the cambium just above the bud, a new shoot will be forced out at that desired bud. If the cut is made just deep enough to interrupt the flow of sap without destroying the twig above, the growth will be initiated, and yet the cut will heal. The logical time to do this would be just before growth starts in the spring.

This idea should be particularly useful to gardeners growing dwarf trees, espaliers or trees for special places in the garden as a hobby.

I am sorry I cannot name the man who thought of the idea, but I first learned of it indirectly. I believe this method of training was first published in a Mississippi agricultural bulletin on some work done on tung oil trees.

TESTS OF 2,4-D ON DANDELION AND PLANTAIN.

Always of interest to nurserymen is the work of those two eminent plant scientists of the Boyce Thompson Institute, Dr. A. E. Hitchcock and Dr. P. W. Zimmerman. In the July-September, 1947, issue of the Contributions is a paper by them on treatment of lawns with 2,4-D to eradicate plantain and dandelion.

Apparently in earlier tests and trials with this weed killer, results were varied and irregular and a number of weeds were found to be only partially killed. Usually the tops were killed, but the weeds were not completely eradicated; too often they recovered the following season. Among these weeds of especial interest are dandelions and plantain, two common lawn weeds. In addition, a disturbing effect had been noted in the lasting discoloration of certain turf areas after treatment with 2,4-D.

During 1946 and part of 1947 a number of test plots were treated with various concentrations of weed

killer, and I shall attempt to summarize their recorded results and recommendations:

"A single treatment with 0.1 per cent 2,4-D was effective in eradicating narrow-leaved plantain and two species of broad-leaved plantains with little or no recovery up to April of the following spring.

"On the basis of the results with dandelion, it would appear that spraying in June or July and again in September with 0.1 per cent 2,4-D (one gallon per 180 square feet) would give the maximum killing with the minimum recovery." They also report that 2,4-D treatments should be repeated each year to keep dandelions and plantain out of lawns. The weed killer should be applied, for best results, during either the fall or spring lawn seeding time. For although the best kill of dandelion comes with summer treatment, the subsequent bare spots are then filled by crab grass. In spring or fall the bare spots are filled with the newly germinated grass seed. 2,4-D does not noticeably affect grass seed germination.

AMERICAN NURSERYMAN

The effectiveness of 2,4-D in killing dandelion in wet, poorly drained soil is greatly limited, and this may be responsible for similar failures in the use of the weed killer on other weeds.

INCOME TAX RETURNS DUE.

January 15 will be the deadline for farmers, in which group nurserymen are included, to file estimates of their 1947 income if it is over \$500. This will be the farmer's first contact with 1947 income taxes, although many other taxpayers have been following the pay-as-you-go procedure. The farmer's estimate must be within thirty-three per cent of his actual income, or he will be subject to a penalty later. He may make a final return and payment by January 15, or he may let that go until March 15.

Those who have income taxable in addition to or other than salaries or wages on which tax is withheld, in which group are included persons owning their own businesses, professional workers and salaried workers whose incomes are over \$5,000, may correct or change previous estimates of their 1947 income until the deadline of January 15.

THE Teas Nursery Co., Inc., formerly at Houston, Tex., is now located at 4400 Bellaire boulevard, Bellaire, Tex.

- Ampelopsis veitchii*, 1-yr. sdlg., 12 to 18 ins.
- Berberis thunbergi atropurpurea*, 1-yr. sdlg., 6 to 9 ins.
- Cornus florida*, 1-yr., sdlg., 8 to 12 ins.
- Cornus florida rubra*, pot grafts.
- Populus billeiana*, 1-yr., 3 to 4 ft.
- Populus nigra italicica*, 1-yr., 4 to 6 ft.
- Rhododendron hybrid*, pot grafts.
- Sorbus aucuparia*, 1-yr., sdlg., 8 to 12 ins.
- Taxus cuspidata*, 2-yr. transplants, 8 to 12 ins.
- Taxus cuspidata capitata*, twice transplanted, 12 to 18 ins.
- Taxus media*, 2-yr. transplants, 8 to 12 ins.
- Taxus media, Halloran*, 2-yr. transplants, 6 to 8 ins.
- Taxus media hicksii*, 2-yr. transplants, 10 to 12 ins.
- Thuja occ. nigra*, 1-yr. transplants.
- Thuja occ. pyramidalis*, 1-yr. transplants.
- Thuja occ. pyramidalis*, twice transplanted, 18 to 24 ins.

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New London, Conn.

SMALL FRUIT PLANTS

We again offer our complete line of Grapes, Currants and Berry Plants.

New booking orders for 1948.

FOSTER NURSERY CO., INC.
69 Orchard St. Fredonia, N. Y.

CHINESE CHESTNUT TREES

Blight-resistant.

TREES—TRANSPLANTS—LINERS

THE GOLD CHESTNUT NURSERY
Cowan, W. Va.

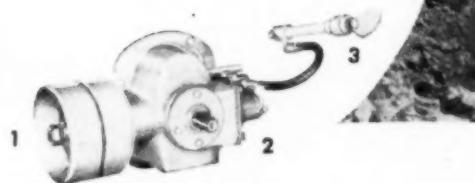
1948 BARGAIN



1. Belt Pulley
2. Power Take-Off
3. Hydraulic Lift

WITH 3-IN-1 POWER TRANSMITTER

The last word in a touch-control hydraulic system.
Attachment for Allis-Chalmers B and C tractors.



- U.S.D.A. sources reveal that power equipment is one of today's best farm buys.
- Cost of farm machinery has increased only 38 percent over 1935-39, compared to 240 percent for farm labor.
- 1948 production costs can be reduced by increased mechanization.

When it comes to bargains in tractor power, the Allis-Chalmers Model B is out in front. It's big enough to handle most jobs around the nursery; just the right size to make efficient use of power on jobs such as hauling and cultivating. Above all, it is reasonably priced.

See your Allis-Chalmers dealer about economical A-C power.



DON'T MISS — The National Farm and Home Hour—biggest farm show of all-time—with Everett Mitchell—every NBC station, every Saturday.

ALLIS-CHALMERS
TRACTOR DIVISION • MILWAUKEE 1, U. S. A.

Coming Events

MEETING CALENDAR.

January 5, Missouri State Nurserymen's Association, Muehlebach hotel, Kansas City.

January 5 and 6, New York State Nurserymen's Association, Hotel Pennsylvania, New York city.

January 6 and 7, Kansas Association of Nurserymen, Hotel Muehlebach, Kansas City, Mo.

January 6 and 7, Western Association of Nurserymen, Hotel Muehlebach, Kansas City, Mo.

January 6 and 7, Maryland Nurserymen's Association, Lord Baltimore hotel, Baltimore.

January 7, Connecticut Nurserymen's Association, Waverly Inn, Cheshire.

January 7 to 9, Indiana Association of Nurserymen, Purdue University, Lafayette.

January 9 and 10, Iowa Nurserymen's Association, Hotel Kirkwood, Des Moines.

January 9 to 11, American Association of Nurserymen, Executive Committee, Hotel La Salle, Chicago.

January 12, American Association of Nurserymen, Special Meeting, Hotel La Salle, Chicago.

January 12, National Landscape Nurserymen's Association, Hotel La Salle, Chicago.

January 13, Massachusetts Nurserymen's Association, Hotel Kenmore, Boston.

January 13 to 15, Illinois State Nurserymen's Association, Hotel La Salle, Chicago.

January 16 and 17, Oklahoma Nurserymen's Association, Huckins hotel, Oklahoma City.

January 16 and 17, Washington State Nurserymen's Association, Commercial hotel, Yakima.

January 19 to 21, Ohio State University short course for arborists, landscape gardeners and nurserymen, Neil House, Columbus.

January 20, Oregon Association of Nurserymen, Heathman hotel, Portland.

January 21, Idaho Nurserymen's Association, Hotel Boise, Boise.

January 21 to 23, New England Nurserymen's Association, Hotel Statler, Boston, Mass.

January 22 and 23, Tennessee State Nurserymen's Association, Hotel Andrew Johnson, Knoxville.

January 22 and 23, Ohio Nurserymen's Association, Neil House, Columbus.

January 22 to 24, North Carolina Nurserymen's Association, North Carolina State College of Agriculture and Engineering, Raleigh.

January 25 to 27, Virginia Nurserymen's Association, Hotel Jefferson, Richmond.

January 28 to 30, Michigan Association of Nurserymen, Hotel Statler, Detroit.

January 29 and 30, New Jersey Association of Nurserymen, Hotel Hildebrandt, Trenton.

February 2 and 3, Kentucky Nurserymen's Association, Lafayette hotel, Lexington.

February 4 and 5, Pennsylvania Nurserymen's Association, Penn-Harris hotel, Harrisburg.

February 6, West Virginia Nurserymen's Association, Wells hotel, Sistersville.

February 19 and 20, Midwestern Chapter of the National Shade Tree Conference, Hotel La Salle, Chicago, Ill.

DISCUSSION PROGRAM FOR MISSOURI MEETING.

The meeting of the Missouri State Nurserymen's Association, which will be held January 5 at the Muehlebach hotel, Kansas City, will be devoted primarily to discussions of current problems of interest to nurserymen. Topics to be considered will include the possibility of reducing present workmen's compensation rates, which are considered to be too high; improvements in the present inspection laws regulating operators engaged in tree surgery, termite control and spraying from the air; a report on the Japanese beetle and phloem necrosis situations; virus diseases, and an amendment to the present mechanics' lien law to cover nursery stock and landscape work. Lloyd Adams, Missouri state entomologist, Jefferson City, will present suggestions for the

improvement of the law as it now stands.

IDAHO MEETING.

The Idaho Nurserymen's Association will meet January 21 at the Hotel Boise, Boise. David C. Petrie and M. Nabeau, both of Boise, are president and vice-president, respectively, of the association, which was reorganized last September 20.

PENNSYLVANIA NOTICE.

Nurserymen planning to attend the convention of the Pennsylvania Nurserymen's Association, which will be held February 4 and 5 at the Penn-Harris hotel, Harrisburg, are advised by Secretary Albert F. Meehan that although the meeting is open to anyone who wishes to attend, the Penn-Harris hotel will accept reservations only from its own cards, and non-members, therefore, should write for a reservation card.

FOR IMMEDIATE SHIPMENT

Tsuga canadensis (Hemlock),
2 to 3 ft., \$1.75 in carload lots;
\$2.00 each.
3 to 4 ft., \$2.75 in carload lots;
\$3.00 each.

Berberis thunbergi (Barberry)
seedlings, Per 1000
3 to 6 ins. \$12.50
9 to 12 ins. 25.00
6 to 9 ins. 18.00

Berberis thunbergi atropurpurea
(Barberry) seedlings,
3 to 6 ins. 20.00
6 to 9 ins. 35.00
9 to 12 ins. 70.00
12 to 15 ins. 85.00

California Privet,
heavily branched,
24 to 36 ins. 55.00
30 to 36 ins. 70.00
36 to 42 ins. 80.00

12,000 2-yr. *Apple Trees,*
standard varieties,
4 to 5 ft. 25.00
5 to 6 ft. 30.00
4000 2-yr. *Grapevines:* \$150.00 per 1000
of 6 varieties.

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LINERS

Taxus capitata, *Taxus cuspidata*, *Taxus intermedia*, *Thuja pyramidalis*, *Thuja boothii*, *Thuja elegantissima* and other select varieties.

Write for prices.

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Trees & Shrubs

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Grapevines, *Currant Roots*,
Currant Cuttings and *Berry Plants*.

Small Fruit Specialists.

WEST HILL NURSERIES

Fredonia, N. Y. Since 1875

Nursery Stock at Wholesale Only.

ARTHUR DUMMETT
Bernardsville, N. J.



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EVERGREENS — In a large assortment of **PYRAMIDAL** and **GLOBE ARBORVITAE**, **PFITZER JUNIPER** and **YEWS** in grades at attractive prices. **SOME LARGE SPECIMEN EVERGREENS**, **SHRUBBERY** and **SHADE TREES**.

Mail want list for prices.

THE WESTMINSTER NURSERIES
Westminster, Md.

Old English BOXWOOD

(Wholesale Only)

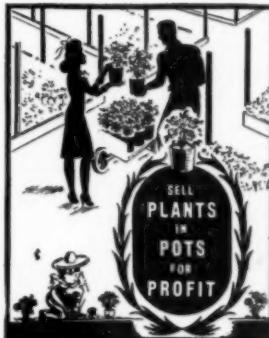
All slow-grown dense specimens. Red clay soil. Priced by height and spread. 18x12 ins. to 24x22 ins. in unlimited quantities. Also large specimens up to 5 ft. Write for price list.

BOXWOOD GARDENS
Mrs. R. P. Royer
High Point, N. C.

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The idea of potting plants is hundreds of years old, but the methods and selling ideas in this book are new—practical—PROFITABLE.

This Free book is mainly a "how we do it" story which illustrates and describes the methods of potting and selling plants of all kinds—for Greater Profit—as developed at Cloverset Flower Farm during our 25 years of practical nursery experience.

You will see in this book how we have built a thriving cash-and-carry business in potted roses, shrubs, perennials, fruit trees, vines and all small nursery stock and without the benefit of a "special" or "ideal" location. You can select the ideas you like best and use them in streamlining your own business. You might want to use our entire plan to increase your Sales, Profits and Customer Satisfaction.

We sincerely believe it is to your advantage to read this Free book.

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3. Help you make more profit.
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"Do It Now!"

Without obligation or cost, please send me your book "Sell Plants in Pots for Profit."

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Firm _____

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City _____

State _____

MAIL ORDER ASSOCIATION DIRECTORS TO MEET.

At an evening meeting of the executive committee of the National Mail Order Nurserymen's Association, which was held December 4, it was voted to hold a meeting of the board of directors, January 13 at the Hotel La Salle, Chicago, Ill. The meeting will be called to order at 8:20 a. m.

Membership in the association was voted to the following nurseries: F. Lagomarsino & Sons, Sacramento, Cal.; Rocknoll Nursery, Morrow, O.; Far North Nurseries, Anchorage, Alaska; Wilson's Evergreen Nursery, Corvallis, Ore.; Newport Nursery Co., Newport, Mich.; Joseph F. Martin Co., Painesville, O., and the Willamette Nursery Co., Portland, Ore.

NORTH CAROLINA PLANS.

A short course for nurserymen is planned for the first two days of the annual winter meeting of the North Carolina Nurserymen's Association, which will be held January 22 to 24 at the North Carolina State College of Agriculture and Engineering, Raleigh. Directed by members of the faculty at the college, the course will include a wide range of subjects.

Officers for the coming year will be elected at the annual business meeting of the association, which will be held the morning of January 24 at the college.

Accommodations may be secured by writing to the Hotel Sir Walter Raleigh, Raleigh.

WESTERN ASSOCIATION ANNOUNCES PROGRAM.

The meeting of the Western Association of Nurserymen, which will be held January 6 and 7 at the Muehlebach hotel, Kansas City, Mo., will be called to order January 6 at 10 a. m. Following the invocation, business for the morning will include the roll call and introduction of members, consideration of applications for membership, reading of the minutes, appointment of committees, the secretary-treasurer's report and the introduction of new members. Speakers on the program will be Wayne Ferris, of the executive committee, Region 4, American Association of Nurserymen; George M. Husser, of the Better Business Bureau, Kansas City, who will discuss "Rackets in the Nursery Business," and Joseph A. Abrahamson, Mount Arbor Nurseries, Shenandoah, Ia., who will present "A Year in the Nursery," a talk concerning soil erosion and terracing.

TAXUS

	In lots of 5 to 24 25 to 100	\$3.25
Cuspidata , 1½ to 2 ft.	\$3.50	5.00
2 to 2½ ft.	5.00	...
Cuspidata Media , 1½ to 2 ft.	3.50	3.25
2 to 2½ ft.	5.00	...
Hicksi , 2½ to 3 ft.	4.50	4.25
3 to 3½ ft.	6.00	5.75
3½ to 4 ft.	7.50	...
Repandens , 1½ to 2 ft.	4.00	3.75

JUNIPERUS

Canaerti and Cupressifolia , 4 to 4½ ft.	5.50	...
4½ to 5 ft.	6.50	...
Keteleeri , 4 to 4½ ft.	5.00	...
4½ to 5 ft.	6.00	...
Armstrong and Von Ehron (Trimmed Globes),		
1½ to 2 ft.	3.50	...
2 to 2½ ft.	4.75	...
Horizontalis Plumosa , 1½ to 2 ft.	2.25	2.00
2 to 2½ ft.	2.75	2.50
2½ to 3 ft.	3.50	3.25
Pfitzeriana Compacta , 1½ to 2 ft.	3.00	...
2 to 2½ ft.	4.00	...
Euonymus Vegetus , 1½ to 2 ft.	2.25	2.00
2 to 2½ ft.	3.00	2.75
2½ to 3 ft.	4.00	...
PINUS MUGHUS , 1½ to 2 ft.	3.00	...

All plants, especially Junipers, are thrifty and heavy-sheared.
Also a good assortment of other specimen landscape materials.

Truckloads only.

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20 varieties, with special offers on quantity lots of Concord.

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5 Black varieties, specializing in Bristol and Morrison.

4 Purple varieties including Sodus and Marion.

5 Standard Red varieties, specializing in Taylor.

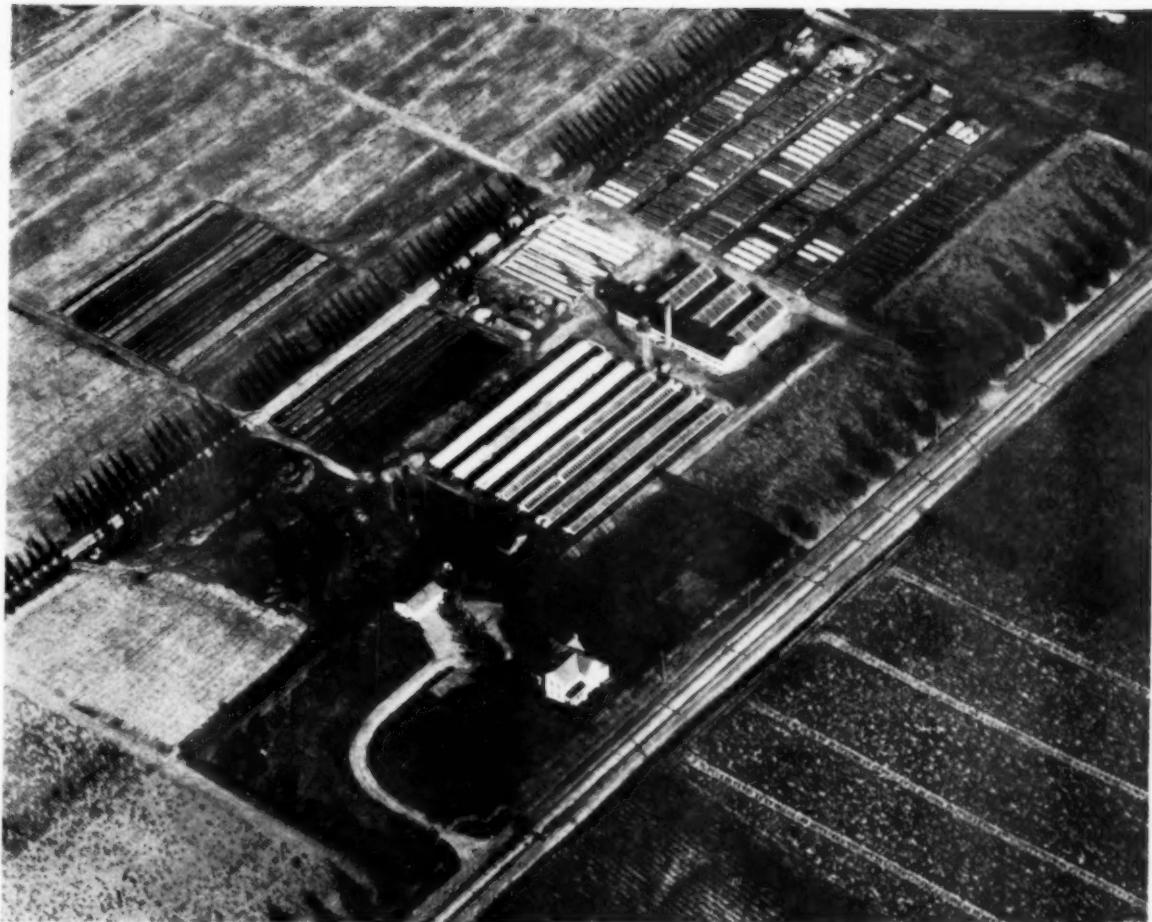
Indian Summer Everbearing Red in No. 1 Suckers and ¼-in. and up.

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Every plant graded to our high standard. Let us quote on your entire small fruit requirements.

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BRIDGETON NEW JERSEY

BRIDGETON

NEW JERSEY

IS ON THE MAP

OUR COMPLETELY MODERNIZED PLANT, USING NEW AND IMPROVED METHODS, IS NOW IN FULL PRODUCTION.

WE HAVE EXCELLENT LINING-OUT AND B&B STOCK TO OFFER WHICH WE WILL ILLUSTRATE IN SUBSEQUENT ISSUES.

JAMES S. WELLS, MGR.

Highlight of the meeting will be a message from R. P. White, executive secretary of the A. A. N. Opening the afternoon program, Mr. White's talk will be entitled "The A. A. N. and You." George Rose will explain the "A. A. N. Market Development and Publicity Program," and Donald Bush, landscape architect for Hare & Hare, will discuss "Landscape Materials Preferred by Landscape Architects."

Climaxing the first day's program will be a banquet. In addition to the

entertainment, Harold Vagtborg will address the group.

Two talks are scheduled for the morning program January 7. "Flowering Trees in Kansas City" will be presented by Stanley McLane, and "Types and Value of Understock" will be discussed by C. A. Chandler, Kansas City.

Association business, including election of officers, will occupy the remainder of the program.

Special entertainment has been planned for the ladies, under the di-

rection of Mrs. John Tonkin, chair-
man, and members are encouraged to
bring their wives and families to the
meeting.

MARYLAND PROGRAM.

G. Hale Harrison, president of the Maryland Nurserymen's Association, will deliver the opening address at the winter meeting of the association, which will be held January 6 and 7 at the Lord Baltimore hotel, Baltimore.

The sale and distribution of nurs-

ery stock through retail channels will be the subject of a forum featuring the following speakers: Homer Kemp, Bountiful Ridge Nurseries, Princess Anne, whose topic will be "Field Agents"; Raymond Bunting, Bunting's Nurseries, Inc., Selbyville, Del., who will discuss "Newspaper and Magazine Advertising," and G. Hale Harrison, Harrison Bros. Nurseries, Berlin, who will talk on "Catalogs." Other speakers, whose names have not yet been announced, will discuss show grounds and landscape sales.

Following a discussion of "Selling Your Social Values" by J. Stevens Stock, Opinion Research Corp., Princeton, N. J., a business session will close the morning program.

At the luncheon, Dr. T. B. Symons will extend a greeting, and the professional achievement award will be presented. "Postwar European Travel" will be discussed by John H. Burton, Burton's Nursery, Hyattsville, and Patsy Donofrio, Carroll Gardens, Westminster, with special reference made to nursery stock.

Highlights of the afternoon program will include a talk entitled "How to Grow Roses" by Merrill L. Balch, C. R. Burr & Co., Cheriton, Va., and colored films showing field-grown roses, presented by Patsy Donofrio. Mrs. Elinor T. Donaldson, Washington, D. C., will speak on "The Use of Better Plant Material and the Replacement of Old Material"; William A. Reed, Baltimore, will review "The Sod Business," and Henry Hohman, Kingsville Nurseries, Kingsville, will report on "Trends in Rare Plants."

Featuring discussions of plants, the morning program for January 7 will open with a talk by Guy M. Stricklen, Towson, on "The Use of Azaleas and Broad-leaved Evergreens." A symposium entitled "New Ornamentals and Fruit Varieties in the Making" will be presented by S. L. Emsweller, speaking on "Ornamental Varieties"; J. R. Magnus, who will consider "Fruit Tree Varieties," and George M. Darrow, who will review "Strawberries and Blueberries," all of the United States Department of Agriculture bureau of plant industry, Beltsville.

Concluding the morning session, W. C. Price, Towson Nurseries, Towson, will report on "Practical Nursery Management."

Harry Wood, Swarthmore College, Swarthmore, Pa., will be the first speaker on the afternoon program with a talk entitled "Around the Year in Your Garden." A forum on pest control will be presented by Ernest N. Cory, speaking on "Quarantine

FRUIT AND NUT TREES

APPLE

	Per 10	Per 100	Per 1000
2-yr., 11/16-in., 5 to 6 ft.	\$6.00	\$50.00	\$450.00
2-yr., 9/16-in., 4 to 6 ft.	5.00	45.00	400.00
2-yr., 7/16-in., 3 to 4 ft.	3.70	32.00	280.00
1-yr., 4 to 5 ft.	4.00	35.00	300.00
1-yr., 3 to 4 ft.	3.00	25.00	220.00
1-yr., 2 to 3 ft.	2.40	20.00	118.00

Varieties

Anoka	Double Red	Liveland Raspberry	Stayman
Bonum	Jonathan	Lodi	Summer Rambo
Close	Double Red	Lowry	Summer Yellow
Cortland	Stayman	Maiden Blush	Delicious
Delicious	Early Harvest	M. B. Twig	Winter Banana
Double Red	Early Red Bird	McIntosh	Winesap
Delicious	Grimes Golden	N. W. Greening	Yellow Delicious
Double Red	Hyslop Crab	Paragon Winesap	Yellow Transparent
Duchess	Jonathan	Smokehouse	York Imperial

PEACH

	Per 10	Per 100	Per 1000
11/16-in., 5 to 7 ft.	\$6.00	\$50.00	\$450.00
9/16-in., 4 to 6 ft.	5.00	45.00	400.00
7/16-in., 3 to 5 ft.	4.50	40.00	350.00

Varieties

Belle of Ga.	Early Elberta	Lahavon	Late Elberta	Salalba
Brackett	Elberta	Heath Cling	Lizzie	Shipper's Red
Carman	Fireglow	Hiley	Mayflower	Slappy
Champion	Golden East	Indian	Red Bird	Sunhigh
Crawford's Early	Golden Jubilee	J. H. Hale	Redhaven	Triogem

PLUM

	Per 10	Per 100
1-in. and up, 6 to 8 ft.	\$12.50	\$100.00
11/16-in., 5 to 6 ft.	9.50	85.00
9/16-in., 4 to 6 ft.	8.00	75.00
7/16-in., 3 to 4 ft.	6.50	60.00

Varieties	Abundance	European Prune
Burbank		Mammoth Golden

PEAR

	Per 10	Per 100
4 to 6 ft., Bartlett and Kieffer	\$7.50	\$65.00
3 to 4 ft., Bartlett and Kieffer	6.00	50.00

NUT TREES

	Per 10	Per 100
Black Walnut, 2 to 3 ft.	\$ 7.00	\$ 60.00
Black Walnut, 3 to 4 ft.	8.50	75.00
American Filbert, 2 to 3 ft.	8.50	75.00
American Filbert, 3 to 4 ft.	11.00	100.00
Papershell Pecan, 2 to 3 ft.	10.00	90.00
Papershell Pecan, 3 to 4 ft.	13.50	125.00

WAYNESBORO NURSERIES, Waynesboro, Va.



THANK YOU

1947 was a good year for us and we thank our many customers for making it so.

For 1948 we have a very fine lot of stock in a large variety list.

Come to see us or send us your want list.

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DANSVILLE, N. Y.

Wholesale growers of dependable Fruit Trees, Ornamental Trees and Shrubs.

FRUIT TREES

We shall be pleased to quote on your list of wants.

All stock in storage.

APPLE TREES, 2-year

11/16-in., 9/16-in., 7/16-in., 5/16-in.

Varieties:

Baldwin, Cortland, Dbl. Red Delicious, Dolgo Crab, Anoka, Duchess, Early McIntosh, Gallia Beauty, Macoun, McIntosh Red, Northern Spy, Red Astrachan, Red Rome Beauty, R. I. Greening, Stayman Winesap, Wealthy, Yellow Delicious, Yellow Transparent.

We can furnish most of the varieties as listed above in 1-year-old stock, 5 to 6 ft., 4 to 5 ft., 3 to 4 ft.

STD. PEAR TREES, 2-year or 1-year

11/16-in., 9/16-in., 7/16-in., 5/16-in.

Varieties:

Bartlett, B. Bosc, Duchess, B. D. Anjou, Clapp Favorite, Gorham, Kieffer, Seckel, Sheldon.

PLUM TREES, 2-year and/or 1-year

11/16-in., 9/16-in., 7/16-in., 5/16-in.

Varieties:

Abundance, Burbank, Bradshaw, Fellenberg, Green Gage, Italian Prune, Lombard, Reine Claude, Shrop. Damson, Stanley Prune, Yellow Egg.

We have a good supply of 1-year Plums, including **Stanley**, that are well branched. All Plums and Prunes are on Myrobalan root.

See our representative at the New York State Nurserymen's Association meeting, January 5 and 6, Hotel Pennsylvania, New York City, and the Illinois State Nurserymen's Association meeting, January 12 to 15, Hotel La Salle, Chicago.

Problems and New Insecticides"; W. F. Jeffers, discussing "The Nematode Situation," and George S. Langford, reporting on "New Types of Spray Equipment," all of the University of Maryland. Edward Stock, Stock Bros., Inc., Bethesda, will present a talk entitled "The Public Demand for Perennials." Colored slides representing outstanding perennials will be made available by Patsy Donofrio.

IOWA PROGRAM.

Program plans are now complete for the meeting of the Iowa Nurserymen's Association, which will be held January 9 and 10 at the Hotel Kirkwood, Des Moines.

Three professors from Iowa State College will speak at the first after-

ORNAMENTAL SHRUBS

CHERRY TREES, 2-year

9/16-in., 7/16-in., 5/16-in., under 5/16-in.

Varieties:

Bing, Black Tartarian, Early Richmond, English Morello, Governor Wood, Lambert, Montmorency, Napoleon, Schmidt, Windsor, Yellow Spanish.

CHERRY, 1-year

9/16-in. and 7/16-in.

Montmorency

Can also furnish 1-year SWEET CHERRY, varieties as listed in 2-year-old stock.

5 to 6 ft., 4 to 5 ft., 3 to 4 ft.

PEACH TREES, 1-year

7/16-in., 5/16-in., 2 to 3 ft.

Varieties:

Elberta, Golden Jubilee, Halehaven, J. H. Hale, Southhaven, Valiant, Vedette.

ORNAMENTAL STOCK

Japan Quince, 18 to 24 ins.

Hydrangea A. S., 2 to 3 ft.

Forsythia Fortunei, 3 to 4 ft.

Amur River North Privet, 4 to 5 ft., 3 to 4 ft., 2 to 3 ft., 18 to 24 ins.

California Privet, 4 to 5 ft., 3 to 4 ft., 2 to 3 ft.

Privets are 2-year, cut back at one year and are well branched.

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EVERGREENS

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SUNCREST EVERGREEN NURSERIES
Johnstown, Pa.

noon session. Dr. W. F. Buckholtz will report on the "Progress in Work Done on Virus Diseases," Prof. E. C. Volz will speak on "Roses in the Iowa Trial Gardens" and Dr. H. M. Harris will present a film entitled "Our Constant Enemy, the Insect." After a report by C. A. Boyer, Michigan State College, East Lansing, on "Work Done on Virus Diseases in Michigan," there will be a business meeting of the Iowa chapter of the American Association of Nurserymen.

A featured attraction is the annual dinner, which will begin at 6:30 p. m. Ollie Hobbs, Bridgeport, Ind., will be the guest speaker for the event and will talk on "Some Experiences with a Divining Rod." There will also be a floor show directed by Dutch Schmidt.

The American Association of Nurserymen will be represented at the morning session January 10 when Mrs. Althea R. Wheeler, of the Verne Burnett organization, New York city, reports on "The Pattern and Plan of the A. A. N. Trade Promotion Program." W. C. Mast, Davenport, and George Rose, Shenandoah, will present reports of the A. A. N. convention.

Two other talks will be presented by Dr. Elmo Hardy, assistant state entomologist, Ames, who will speak on "Insect Conditions in Iowa Nurseries," and Dr. E. S. Haber, department of horticulture, Iowa State College, who will discuss "New Plant Introductions and Their Release."

An attraction at the meeting will be the display of specimen fruits prepared by Prof. H. L. Lantz, Iowa State College.

ILLINOIS DIRECTORS COMPLETE PLANS.

At a meeting of the board of directors of the Illinois State Nurserymen's Association, which was held December 11 at the D. Hill Nursery Co., Dundee, final details were completed for the program of the coming association convention January 13 to 15 at the Hotel La Salle, Chicago.

In addition to the board members, guests present at the meeting, which was held in the office of the nursery, included Robert L. Roland, executive secretary of the Society of American Florists; James Sykora, a director of the Florists' Telegraph Delivery Association, and members of the nursery inspection staff of the state department of agriculture from northern Illinois.

Plans for the twenty-fifth national



ROSES

	Lots of 100	Lots of 1000
No. 1 Grade	45c each	40c each
No. 1 1/2 Grade	35c each	30c each
No. 2 Grade	25c each	20c each

Write for quotations in larger quantities.

VARIETIES AS FOLLOWS:

RED ROSES	PINK ROSES
Ami Quinard	Cynthia
C. K. Douglas	Betty Uprichard
E. G. Hill	Briarcliff
Etoile de Holland	Columbia
F. S. Key	Dainty Bess
Rouge Mallerin	Editor
TWO-TONE	McFarland
Hoover	Pink Radiance
Conde De Saastago	
E. N. Perkins	
Red Radiance	
WHITE ROSES	
Caledonia	CLIMBERS
Konigin Luise	C. I. Talisman
K. A. Viktoria	
POLYANTHAS	
Golden Salmon	YELLOW ROSES
Ideal	Golden Ophelia
Else Poulsen	Roselandia
Kirsten Poulsen	Roslyn

ROSES
Golden Charm
Lady Hillingdon
Talisman

Hedge Plants, Heavy, Field Crown	Each
Amur River Privet	
4 to 5 feet Heavy	15c
3 to 4 feet Heavy	10c
California Privet	
2 to 3 feet	6c
3 to 4 feet	8½c
4 to 5 feet	15c

CARDENIA:	Fortunei, McClellan & Hadley	
6 to 9 inches Bareroot—1 Year	15c	
9 to 12 inches Bareroot	20c	
12 to 15 inches Bareroot	30c	
15 to 18 inches Bareroot	65c	
18 to 24 inches B & B Heavy	90c	
24 to 30 inches B & B	1.25	

FRUIT TREES

PEACH

Varieties as follows:	Chinese Cling
Elberta	Early Wheeler
Early Elberta	Golden Jubilee
J. H. Hale	Mayflower
Hale Haven	Frank

Quantity and Prices as follows:	10-99	100-499	499-1000
12-18 inches	14c	12c	10c
18-24 inches	18c	16c	14c
2-3 feet	28c	23c	20c
4 feet & up	660c	55c	50c
4½ feet & up	70c	65c	60c

FIGS

Texas Everbearing	Each
12 to 18 inches	10c
18 to 24 inches	12c

NUT TREES

Hardy Native Pecans	Each
18 to 24 inches	56c
2 to 3 feet	69c
Black Walnut	Each
18 to 24 inches	40c
3 to 4 feet	75c
4 to 5 feet	90c
5 to 6 feet	1.50
6 to 8 feet	2.00
8 to 10 feet	2.50
10 to 12 feet	3.00

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**EVERGREENS
SHADE TREES**

**SHRUBS, VINES
HEDGE PLANTS, etc.**

In good assortment.

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AMERICAN NURSERYMAN, 343 So. Dearborn St.,

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BERBERIS THUNBERGI SEEDLINGS CLEANUP SALE

Stocky, well branched plants. Long, fibrous roots.

Per 1000

250,000	Berberis Thunbergi	
	2-year seedlings, not transplanted, 12 to 18 ins.	\$35.00
20,000	Berberis Thunbergi	
	2-year seedlings, not transplanted, 18 to 24 ins.	45.00
25,000	Berberis Thunbergi Atropurpurea	
	1-year seedlings, 3 to 6 ins.	20.00

Contact Louis Vanderbrook at the Illinois State Nurserymen's Association meeting.

Write for general Wholesale List of Ornamental Trees, Deciduous Shrubs, Vines, Evergreens and Privet.

C. L. VANDERBROOK & SON

Manchester, Conn.

flower show, which will be held March 14 through 21 in the Coliseum, Fifteenth street and Wabash avenue, Chicago, were discussed by Mr. Roland and Mr. Sykora, who is chairman of the flower show committee. The cooperation of nurserymen at the show was considered.

Following the meeting, the group was served a turkey dinner as guests of W. J. Smart, president of the association, and the D. Hill Nursery Co.

The program, which was published in full in the preceding issue, for the Illinois State Nurserymen's Association convention will feature reports by J. Awdry Armstrong and R. P. White, president and executive secretary of the American Association of Nurserymen, as well as talks concerning the latest scientific developments and methods of interest to nurserymen. Business sessions of the state association and the Illinois chapter of the A. A. N. will be held.

Tickets for the annual banquet January 14 will be included in the regular registration fee without additional cost, since expenses are being covered to a large extent through the courtesy of advertisers in the printed program. Additional banquet tickets will be sold to those registered at the convention at \$5 each. Enter-

SPECIMEN TAXUS

(With J. B. certificate)

<i>Taxus cuspidata</i> , spread.....	1½ to 3 ft.
<i>Taxus cuspidata</i> (extra-heavy), spread.....	8 to 10 ft.
<i>Taxus cuspidata capitata</i>	4 to 6 ft.
<i>Taxus cuspidata capitata</i> (extra-heavy).....	10 to 14 ft.
<i>Taxus cuspidata nana</i> (<i>brevifolia</i>).....	15 to 24 ins.
<i>Taxus media</i> (<i>intermedia</i>).....	15 to 24 ins.
<i>Taxus media</i> <i>hatfieldii</i>	1½ to 2½ ft.
<i>Taxus media</i> <i>hicksii</i>	2 to 3½ ft.
<i>Thuja occ. pyramidalis</i>	4 to 6 ft.

LINING-OUT TAXUS

<i>Taxus cuspidata</i>	12 to 18 ins.
<i>Taxus cuspidata capitata</i>	12 to 24 ins.
<i>Taxus media hicksii</i>	12 to 24 ins.

Also, without J. B. certificate

<i>Juniperus pfitzeriana</i> , 3 to 4 ft.	<i>Pinus strobus</i> , 4 to 5 ft.
<i>Tsuga canadensis</i> , 2 to 6 ft.	<i>Ilex glabra</i> , 1½ to 2½ ft.

And many other items suitable for landscape trade.

Truckloads or carloads only. Write for prices.

BULK'S NURSERIES, INC. Babylon, L. I., N. Y.

LINING-OUT BERBERIS THUNBERGI

Grade	1-year seedlings	Per 1000	Per 10,000
3 to 6 ins.....	\$15.00	\$135.00	
6 to 9 ins.....	20.00	180.00	
9 to 12 ins.....	25.00	225.00	

WILSON'S NURSERIES
Manchester, Conn.

ROSA MULTIFLORA JAPONICA

Seedlings	Per 1000	Per 10,000
4 to 6 mm.....	\$30.00	
3 to 4 mm.....	20.00	
2 to 3 mm.....	18.00	
Field run, 2 to 6 mm.....	18.00	
Sample for \$2.00. Cash with order.		

BROOKVILLE NURSERIES
Glen Head, N. Y.

tainment at the banquet will include the film "Flowers in Action," presented by John Nash Ott, Jr., Winnetka, Ill.

WASHINGTON PROGRAM.

Program plans are now complete for the midwinter meeting of the Washington State Nurserymen's Association, which will be held January 16 and 17 at Yakima. Following registration at the Chamber of Commerce Club Room auditorium, President Ray Beam, May Nursery Co., Yakima, will open the program with an address of welcome. B. R. Sturm, Washington Nurseries, Toppenish, will review the "History of the Nursery Business in the State of Washington," and W. D. Plough, Columbia & Okanogan Nursery Co., Wenatchee, will follow with a report on "Fruit Tree Production in the Northwest." After a discussion of "Advertising and Nursery Sales" presented by John Hanley, editor of Northwest Gardens & Homes, Seattle, the remainder of the morning program will be devoted to discussions on plant propagation and production. Howard Andrews, Mountain Meadow Nursery, Monroe, will speak on "Evergreen and Broad-leaved Evergreen Production in the Northwest"; Dr. C. D. Schwartz, assisted by Arthur Myhre, both of the Washington experiment station, will speak on the "Propagation of Evergreens," and John Van Dyke, State Flower Nursery, Bothell, will consider the "Propagation of Broad-leaved Evergreens."

After luncheon the program will be resumed by Dr. Earle C. Blodgett, who will report on the "Progress of the Budwood Certification Program," and Dr. Charles Gould, whose topic will be "Bulb Diseases and the Disease Situation in Washington," both of the Washington experiment station. A representative of the Washington state department of agriculture will discuss "Inspekshun," and "The Nurseryman's Responsibility to the Fruit Industry" will be the title of a talk by Dr. T. A. Merrill, head of the department of horticulture, Washington State College, Pullman.

John Hanley will be toastmaster at the annual banquet, which is planned for the evening. Dr. J. C. Knott will be the guest speaker, and a movie in color taken in Holland since the war will be shown by Frank Bonnell, Bonnell Nurseries, Renton.

Opening the morning session January 17, S. C. Vandecavye, head of the soils department, Washington State College, will lecture on "What Is Meant by Soil Nutrition." Three other topics relating to the nursery

ROSES WHOLESALE

Our 2-year field-grown roses, budded on Japonica-Multiflora, are the best roses we have ever had to offer.

DELIVERIES ARE NOW BEING MADE and shipments continue to EARLY SPRING.

	No. 1	No. 1 1/2	No. 2
1 to 100	55c	45c	35c
100 to 500	50c	40c	30c

(Write for prices on lots of 500 and over.)

ORDER FROM THIS AD NOW

Order in groups of 10 of a variety, please.

REDS:

Ami Quinard
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Night
Red Radiance
Golden Salmon (Poly.)
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PINKS:

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Talisman

YELLOWS:
Golden Dawn
Luxembourg
Mrs. P. S. du Pont
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Talisman Yellow

CLIMBERS

Climbing Caledonia (White)
Climbing Columbia (Pink)
Climbing Etoile de Hollande (Red)

Climbing Red Talisman (Red)
Climbing Talisman (Two-Tone)
Climbing Red Radiance (Red)
Paul's Scarlet Climber (Red)

TERMS: Cash with order, 2% discount and no packing charges; or 50% cash with order, balance C.O.D.

Our roses are liberally graded and up to standard pack, shipped so that they will be received by you in FIRST-CLASS CONDITION.

BRYON FLORAL GARDENS

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WALLINGFORD, CONN.

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A. N. Pierson, Inc.

A complete line of well grown hardy plant material
Evergreens and Lining-out Stock

ONE-YEAR CUTTINGS

Per 100 Per 1000

Ligustrum ovalifolium,	\$2.50	\$22.00
Forstyrnia spectabilis,	3.50	30.00

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View Ave. Middletown, R. I.

THE CULTIVATED CONIFERS

By L. H. Bailey

The first half of the volume is devoted to a systematic treatment of coniferous evergreens under five general groups. About 1,000 species and varieties are recorded.

The last half concerns the growing of evergreens, their use in the landscape, cultivation and propagation, insects and diseases, etc.

404 pages. Illustrated
\$7.50 postpaid

AMERICAN NURSERYMAN
348 South Dearborn St., Chicago 4, Ill.

LINING-OUT EVERGREENS

	One-year Field-grown Grafts	Per 10	Per 100		Juniperus communis (Irish),	Per 10	Per 100	Per 1000
Juniperus scopulorum Blue Heaven.....	\$8.50	\$75.00			12 to 15 ins., TTT	\$3.50	\$30.00	\$275.00
J. s. communis type or Pfizer type.....	8.50	75.00			15 to 18 ins., TTT	4.50	40.00	375.00
J. s. montana, No. 1, semidwarf, green.....	8.50	75.00			18 to 24 ins., TTT	5.50	50.00	450.00
J. s. Silver Cord.....	8.50	75.00						
Juniperus virginiana canaertii.....	8.50	75.00			Juniperus communis ashfordii (Irish),			
J. v. elegantissima (Lee's Goldtip),.....	8.50	75.00			9 to 12 ins., TTT	2.50	20.00	180.00
J. v. glauca.....	8.50	75.00			12 to 18 ins., TTT	3.50	30.00	275.00
J. v. Hill's Dundee.....	8.50	75.00						
Juniperus squamata meyeri.....	8.50	75.00			Juniperus fastigiata (Irish),			
					12 to 18 ins., TTT	3.50	30.00	275.00
					15 to 18 ins., TTT	4.50	40.00	375.00
					18 to 24 ins., TTT	5.50	50.00	450.00
50 at 100 rate, not less than 10 of a kind; 250 at 1000 rate.								
American Arborvitae,		Per 10	Per 100	Per 1000				
6 to 9 ins., T	\$0.75	\$ 6.50	\$ 60.00		Juniperus pfitzeriana,			
9 to 12 ins., T	1.25	10.00	90.00		6 to 9 ins., TT	2.50	20.00	180.00
6 to 9 ins., TT	1.50	12.50	100.00		9 to 12 ins., TT	3.50	30.00	275.00
9 to 12 ins., TT	2.00	15.00	135.00					
12 to 18 ins., TTT	3.00	25.00	225.00		Juniperus scopulorum,			
American Arborvitae, Globe,					2 to 4 ins., T	3.50	30.00	
6 to 9 ins., TT	2.50	20.00	180.00		4 to 6 ins., T	1.00	7.00	60.00
9 to 12 ins., TT	3.50	30.00	275.00		6 to 9 ins., T	1.25	10.00	90.00
American Arborvitae, Pyramidal,					9 to 12 ins., T	1.75	15.00	140.00
6 to 9 ins., TT	2.50	20.00	180.00					
Juniperus kosteri,					Juniperus virginiana, Platte River type,			
6 to 9 ins., TT	2.50	20.00	180.00		2 to 4 ins., T	3.00	25.00	
9 to 12 ins., TT	3.50	30.00	275.00		4 to 6 ins., T	6.00	50.00	
					6 to 9 ins., T	1.00	7.00	60.00
					9 to 12 ins., T	1.25	10.00	90.00
					12 to 15 ins., T	2.00	16.00	150.00

PLUMFIELD NURSERIES

2105 North Nye Ave.

L. A. MOFFET, Mgr.

FREMONT, NEB.

business will be featured on the program; Mrs. L. N. Roberson, L. N. Roberson Nursery, Seattle, will consider "Where Are Our Future Nurserymen Coming From?"; J. W. Cadick, assistant professor of landscape gardening, Washington State College, will speak on "Landscape Appreciation Through Education," and Charles Morrison, Zillah, will discuss "Looking into the Future of the Nursery Business."

A tour of the cold-storage, shipping and handling rooms of the May Nursery Co., Yakima, in the afternoon will conclude the meeting.

PLAN MIDWESTERN TREE CONFERENCE.

The third meeting of the Midwestern Chapter of the National Shade Tree Conference will be held February 19 and 20 at the Hotel La Salle, Chicago, Ill. Tree problems of the midwest will be discussed by well known arborists and scientists, Noel B. Wyson, secretary, has announced.

Several features of special interest will highlight the program, including a question and suggestion box. Questions will be drawn from the box and answered at the plant clinic sessions. A banquet with entertainment is

OUR OUTSTANDING EVERGREENS

TH. PYRAMIDALIS, 4 to 5 ft.

TH. OCCIDENTALIS NIGRA, 4 to 5 ft.

TH. OCC. WOODWARDI, 18 to 24 ins.

TAXUS CUSPIDATA, 18 to 24 ins.

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GENEVA, N. Y.

planned for the evening of February 19. The committee on arrangements extends a cordial invitation to all persons interested in tree care to attend the conference.

Papers to be presented include: "Drainage in Relation to Trees," by N. Y. Alvis, permit engineer, forest preserve district of Cook county, Ill.; "Sulphur Dioxide Injury to Vegetation," by Dr. E. R. Spencer, consulting botanist and plant pathologist, Lebanon, Ill.; "Oak Wilt," by Dr. A. J. Riker, plant pathologist, University of Wisconsin, Madison; "Mosquito and Fly Control by Mist Spraying," by J. Lyell Clarke, sanitary engineer, Des Plaines Valley mosquito abatement district, Lyons, Ill., and "Control of Shade Tree Insects," by Dr. L. L. English, entomologist, Illinois State Natural History Survey, Urbana.

"Recent Advances in Insecticides" will be presented by Dr. George C. Decker, head, section of economic entomology, Illinois State Natural History Survey, Urbana; "2,4-D Developments" will be the topic of J. E. McDonell, Sherwin-Williams Co., Milwaukee, Wis.; "Municipal Nurseries," by Richard K. Alman, city arborist, Cedar Rapids, Ia., and "Trees in Park Development," by R. B. McClintock, superintendent of parks and recreation, Omaha, Neb.

GARDEN SYMPOSIUM.

The second annual symposium on eighteenth century gardens and flowers will be held at Williamsburg, Va., January 19 to 23 and repeated January 26 to 30. The program will include illustrated lectures, informal discussions and conducted garden tours. Approximately fifty gardens have been restored to their original appearance. Among the speakers on the program will be Arthur A. Shurcliff, Boston, a past president of the American Society of Landscape Architects. A fee of \$10 will be charged for the 5-day symposium.

NEW WEED KILLER FOR SOUTHERN PINES.

Ordinary dry cleaning fluid applied as a spray has been found effective as a weed killer for southern pine nurseries, and its use is expected to save twenty-two southern state and federal forest tree nurseries more than \$100,000 in weeding costs next year and practically to eliminate the costly job of pulling the weeds by hand, according to J. Herbert Stone, United States regional forester of Atlanta. While weeding 1,000 trees by hand costs from 60 cents to \$1.50,

LINING-OUT STOCK FOR SPRING, 1948

Grafted Evergreens, 2½-in. pots, \$45.00 per 100; \$425.00 per 1000.

Juniperus virginiana canaerti
Juniperus virginiana canaerti compacta
Juniperus virginiana glauca
Juniperus virginiana elegantissima (Lee)
Juniperus virginiana burki
Juniperus virginiana keteleeri
Juniperus virginiana pyramidalis hilli
Juniperus chinensis columnaris glauca
Juniperus chinensis columnaris (Green)
Juniperus chinensis compacta
Juniperus chinensis mascula
Juniperus chinensis stricta
Juniperus scopulorum (Pathfinder)
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Biota aurea nana compacta (Berckmans)
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Also any other kind you wish to have grafted, providing your order for this special kind is in our possession before February 1, 1948.

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Each plate shows an accurate color reproduction of the full hue and three graduated tints of the full hue. In so far as possible, an example of a flower in each designated color is given. In addition, each page offers useful information relating to the series, such as equivalent color designations, brief history of each color term, synonymous terms in foreign languages.

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UNCONDITIONALLY GUARANTEED TWO-YEAR PEACH AT UNUSUALLY LOW PRICES

We have about 30,000 two-year **PEACH** of assorted varieties, predominantly regular Elberta, at the following low prices:

	Each
3 to 4 ft., 7/16-in.	20c
3 to 4 ft., 9/16-in.	25c
3 to 4 ft., 11/16-in.	30c
4 to 5 ft., 9/16-in.	35c
4 to 5 ft., 11/16-in.	40c

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this selective herbicide does the same job for 5 cents.

The ability of this selective herbicide to eliminate weeds and leave the pine trees unharmed was discovered by Floyd M. Cossitt, forester in charge of tree nurseries and planting for the United States forest service, and was tested and developed by him in cooperation with the southern state foresters and the Standard Oil Co. of Kentucky.

The dry cleaning fluid is applied with an ordinary power sprayer which carries an 18-foot boom capable of treating three seedbeds at a time. Twenty-five to fifty gallons of spray are applied per acre, depending upon the age of the trees. The spray can be applied as early as seven to ten days after the seeds germinate without injury to the seedlings. One spray will last as long as three weeks, depending on weather and weed conditions. The fluid evaporates in time without harm to the soil. Killing action is rapid.

This weed killer should not be used indiscriminately, however, as it will kill cotton, hardwood seedlings and many broad-leaved plants. But when used properly it will not harm southern pine and cedar seedlings. A few minor weeds are resistant to the spray.

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Place your order now and avoid disappointment later.

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9 to 12 inches, xx	\$ 65.00
12 to 15 inches, xx	85.00
15 to 18 inches, xx	125.00

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	Per 100
Douglas Fir, 5-yr., x	\$15.00
Juniper Pfitzeriana, 1-yr., x	20.00
Tsuga Canadensis, 4-yr., x	22.00
Taxus Cuspidata, 2-yr., x	20.00
Taxus Hicksii, 2-yr., x	20.00
Taxus Hatfieldi, 2-yr., x	25.00
Thuja Pyramidalis, 2-yr., x	25.00
Chamaecyparis Pl. Compacta, 2-yr., x	30.00

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	Per 100
Hemerocallis Kwanso Floreplena	\$12.00
Iris Kaempferi, mixed	15.00

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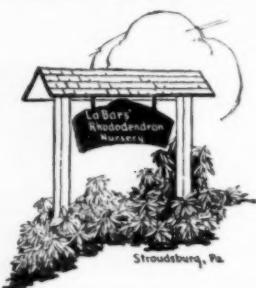
(X indicates times transplanted)	Each 100 rate
Arborvitae, Globe, X, 3 to 6 ins.	\$0.15
Arborvitae, Globe, XX, 5 to 8 ins.	.20
Azalea Ghent Hybrids, X, 1 to 2 ins.	.14
Azalea mollis, XX, 2 to 4 ins.	.14
Azalea mollis, XX, 4 to 6 ins.	.25
Azalea mollis, yellow, XX, 2 to 4 ins.	.25
Boxwood, Hardy Korean, X, 4 to 6 ins.	.14
Colorado Blue Spruce, X, 2 to 4 ins.	.09
Cypress, Lawson, S, 3 to 6 ins.	.10
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Cytisus scoparius (Scotch Broom), sdg., 8 to 12 ins.	.10
Euonymus carrierei, X, 4 to 8 ins.	.10
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Euonymus fortunei, X, 4 to 8 ins.	.10
Euonymus patens, X, 4 to 8 ins.	.10
Euonymus vegetus, X, 3 to 6 ins.	.10
Euonymus vegetus, XX, 6 to 12 ins.	.15
Ilex crenata convexa (bulata), X, 2 to 4 ins.	.14
Ilex glabra, X, 2 to 4 ins.	.15
Ilex rotundifolia, X, 2 to 4 ins.	.14
Ilex rotundifolia, XX, 4 to 6 ins.	.18
Juniper, Andorra, X, 4 to 6 ins.	.14
Juniper, Andorra, X, 6 to 9 ins.	.17
Juniperus glauca hetzii, X, 4 to 6 ins.	.25
Juniperus glauca hetzii, X, 6 to 8 ins.	.30
Juniperus virginiana, X, 4 to 6 ins.	.10
Leucothoe catesbeiana, XX, 3 to 6 ins.	.18
Oak, Pin, sdg., 6 to 12 ins.	.08
Pieris japonica, XX, 3 to 5 ins.	.20
Rhododendron hybrid, X, 2 to 6 ins.	.32
Rhododendron hybrid, XX, 6 to 12 ins.	.45
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Taxus cuspidata, X, 3 to 5 ins.	.15
Taxus cuspidata, X, 5 to 7 ins.	.18
Tsuga canadensis, XX, 6 to 8 ins.	.22
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OBITUARY

Alexander Wallace.

Alexander Wallace, 87, nurseryman and florist of Portland, Me., died suddenly November 28 at his home. Mr. Wallace operated the Wallace Nurseries, South Portland, and the Wallace Greenhouses, Portland.

Born at Dundee, Scotland, the son of David and Mary Malcolm Wallace, Mr. Wallace served his apprenticeship as a florist and nurseryman with the Stewart Nurseries, Dundee. For several years he was associated with his brother James, who operated the retail greenhouses in front of the Beechwood cemetery at Ottawa, Canada. Later he was associated with Paul Henderson, at Jersey City, N. J., growing flowers which were sold in the New York markets.

Mr. Wallace first came to Portland in 1883 as superintendent of the Brown estate. After the Browns died he leased the estate and conducted a combination florists', landscape and nursery business. He established the Wallace Greenhouses at Portland in 1898 and the Wallace Nurseries at South Portland in 1920. He was active in and managed both concerns until his death.

He was active in both trade and social organizations, and his firm was a member of the American Association of Nurserymen and the New England Nurserymen's Association. He belonged to the Telegraph Delivery Florists and the Society of American Florists. A member of the Ancient Landmark Lodge of Masons, Portland Commandery Knights Templars, Kora Shrine and Eastern Star, Mr. Wallace was also a member of the Odd Fellows for more than fifty years.

In 1883 Mr. Wallace married Georgiana Currie, of Edinburgh, Scotland. Mrs. Wallace died April 19, 1935.

Surviving are three sons, James G., George Alexander and Clinton D. Wallace, of the Wallace Greenhouses and Wallace Nurseries, and one daughter, Lillian G. Wallace. Another son, John Clyde, who was associated with his father in the nursery business, died suddenly in April, 1944. A sister, Mrs. Elizabeth Dempsey, and several nephews and nieces, of Ottawa, Canada, also survive.

Rogers E. Lacy.

Rogers E. Lacy, 63, owner of the R. Lacy Nursery, Longview, Tex., died December 9. He had been ill since September.

Considered one of the wealthiest

Northern-grown Lining-out Stock

	Per 100	Per 1000
Aronia melanocarpa,	\$5.00	\$45.00
1 to 2 ft.		
Betula papyrifera, 1 to 2 ft.	6.00	50.00
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Fagus grandifolia,		
6 to 12 ins.	5.00	40.00
Ilex verticillata, 1 to 2 ft.	5.00	40.00
Prunus virginiana, 1 to 2 ft.	6.00	50.00
Rhus typhina, 6 to 12 ins.	4.00	30.00
Syringa vulgaris, 1 to 2 ft.	6.00	50.00
Viburnum cassiopeoides,		
1 to 2 ft.	6.00	50.00
Viburnum dentatum,		
1 to 2 ft.	6.00	50.00
Viburnum lentago, 1 to 2 ft.	6.00	50.00

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Abies balsamea		
4 to 8-inch seedlings	5.00	30.00
8 to 12-inch seedlings	8.00	60.00
Juniperus virginiana		
4 to 8-inch seedlings	5.00	40.00
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4 to 8-inch seedlings	4.00	25.00
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The above stock is first quality collected lining-out stock.

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Tsuga canadensis		
6 to 8 ins., 1-yr. transplants	15.00	120.00
6 to 8 ins., 2-yr. transplants	18.00	150.00
8 to 12 ins., 1-yr. transplants	18.00	150.00
8 to 12 ins., 2-yr. transplants	20.00	180.00

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men in Texas, Mr. Lacy, who began as a small-town merchant, founded a fortune in the east Texas oil discovery of 1931. His holdings extended throughout Texas, Louisiana and Mississippi.

S. A. Stanley.

S. A. Stanley, of Stanley's Nursery, Eagle River, Wis., died November 26, in a hospital at Rhinelander, Wis., where he had been taken after suffering a heart attack while on a hunting trip.

Mr. Stanley formerly owned Stanley's Greenhouses, at Iron Mountain, Mich., and sold that establishment in 1938. He then moved to Eagle River to open the present nursery firm.

Walter Van Grutznor.

Walter Van Grutznor, 75, died at his home at Federalsburg, Md., on November 8, after an illness of several months.

Mr. Van Grutznor was born in France and resided in this country for the past fifty-five years. He operated the Walter Van Grutznor Nursery at Federalsburg.

Mrs. Annie Van Grutznor, his widow, is his only survivor.

BLAME DDT FOR MITES.

Insect specialists have blamed the use of DDT for the increasing numbers of 2-spotted spider mites in New York orchards. This mite, which had not been considered an orchard pest prior to 1946, did accountable damage to apple trees last year, and even more the past summer.

The 2-spotted mite attacks the leaves of trees and therefore cuts down fruit size. Often there may be as many as 200 mites on a single leaf, although the pest does not appear until late in the season. Its damage is similar to that of the European red mite, but indications are that it is maybe more severe.

According to Dr. P. J. Chapman, of the New York experiment station at Geneva, "Circumstantial evidence indicates strongly that the increase in numbers of the 2-spotted mite has been caused by the use of DDT. How and why this has happened are not yet clear."

He goes on to say that, while new to orchards, the same pest, also known as the red spider, has long been troublesome in greenhouses and on vegetable crops in some areas in the past. Experiments indicate that the dinitro compounds and some of the new organic materials will control the pest when applied in the summer months.

WHOLESALE GROWERS of QUALITY FRUIT STOCK

Reasonably Priced

Prompt and Efficient Service

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APPLES**

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We will have a surplus of about 10,000 potted plants and rooted cuttings. Spring delivery.

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1-yr. potted plants.....	\$0.30
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Thuja occ. woodwardi,	10 rate each
15 to 18 inches.....	\$1.40
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24 to 30 inches.....	3.25
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Extra-Choice Peach Trees,	300 rate each
11/16-inch.....	\$0.55
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POLYGONUM AUBERTI

(Silver-lace Vines)

	Per 100	Per 1000
2-yr., No. 1.....	\$20.00	\$175.00
2-yr., medium.....	15.00	120.00

Ready for immediate shipment.

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Painesville, Ohio

New Books and Bulletins

"MODERN ROSES III."

Prepared in cooperation with the American Rose Society by Dr. J. Horace McFarland, "Modern Roses III" is the third edition of the rose guidebook first published in 1930. The present revised issue, which presents a brief description and genealogy of 5,284 roses, including 296 species, should prove useful to nurserymen, hybridizers and other plantmen. Thirty-one illustrations accompany the text.

Discussing both those varieties in commerce today as well as those that have made their mark in the past, "Modern Roses III" includes the names and addresses of the world's rose hybridizers and introducers, together with the names of the varieties for which each one is responsible. Dr. Alfred Rehder, of the Arnold Arboretum, Jamaica Plain, Mass., prepared the list of all known species roses. The volume is published by the J. Horace McFarland Co., at \$5.75.

ROSE PICTURE BOOK.

A handsome, revised edition has recently been issued of "Roses of the World in Color" by J. Horace McFarland, past president of the American Rose Society and for twenty-eight years editor of its yearbook. Dedicated to rose fanciers, the new 296-page edition is an outstanding contribution to rose literature and merits the attention of rose growers, not only for its profusion of beautiful color plates, which number 283, but also for its text, which contains descriptive paragraphs concerning more than 500 rose varieties.

Described by its author as not "intended to be a dictionary of the rose, but a picture book primarily, with enough text provided to set the rosarian on the right road toward getting acquainted with the particular variety in question," the book yet includes information on so wide a range of roses that it may be considered a valuable reference source. Flowers are discussed, conveniently, in alphabetical order, with the name of the originator and introducer of each included.

Beside the extensive catalog of varieties, the book contains brief chapters relating to the history of the rose, as well as suggestions for growing, which include discussions of choosing roses, when to plant, what kind, preparing the ground, planting

and aftertreatment. A list of the abbreviations used, with explanations, precedes Dr. McFarland's comments on the varieties. A classification of rose varieties appears at the back of the book together with an index of the flowers mentioned.

Although it is not intended to be a rose-growing manual, the book abounds in suggestions for the proper treatment and location of many different varieties and includes a map showing the various rose zones of the United States, as well as mentioning the shortcomings and good points of each flower.

The volume is published by the Houghton Mifflin Co., Boston, Mass., and is priced at \$5.

BOTANICAL EXPEDITION.

A historic account of the establishment of the first botanical garden in Mexico in 1788 has been translated and collated by Harold W.

Rickett, bibliographer of the New York Botanical Garden. Entitled "The Royal Botanical Expedition to New Spain," the work traces the garden's institution and precarious existence during the period 1788 to 1820 from source material contained in documents now kept in the national archives of Mexico. From these records of the botanical expedition, dispatched by Charles III in 1787 to survey the "natural productions" of his domain of New Spain and to establish there a botanical garden, Mr. Rickett has constructed a detailed picture of the operation of the garden and the itinerary of the expedition, together with interesting studies of the various personalities. Six years only had been granted to sample the vast floral wealth of the country, and although a petition was granted to spend two more years, explorations during this period were interrupted by a war. After the departure of several of the members for Spain, the history traces the fortunes of one of the most promising among them, Jose Mozo, who was reduced to a beggarly existence at Montpellier. Even-

ROSES

TWO-YEAR, FIELD-GROWN

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These Roses are GROWN RIGHT—GRADED RIGHT—SHIPPED RIGHT.
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PRICES

500 Lots and over: No. 1, 40c; No. 1½, 30c; No. 2, 25c.
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Orders for less than 100 Roses: No. 1, 50c; No. 1½, 40c; No. 2, 30c.
ORDER GROUPS OF 10. WE DO NOT BREAK BUNDLES. We will wrap these Roses in individual packages and label for an additional 5c each.

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Pinkish-white flowers in May**

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Per 100 Per 1000

2½-in. pots \$35.00 \$300.00
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WANTED SHRUBS FOR LINING OUT

Viburnum lentago
Viburnum dentatum
Viburnum opulus sterile
Cotoneaster acutifolia
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TO TRADE

Lining-out, growing in our field.

Syringa persica
Physocarpus monogynus
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Spiraea froebeli
Ribes alpinum
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2 to 4 inches.....	\$4.00
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Wholesale growers of a general assortment for the best landscape plantings.

BRYANT'S NURSERIES

Princeton, Illinois

500,000

Hardy Mums—Cushion Mums

Hardy English

CHRYSANTHEMUMS

NEW

Red Cushion Papooses

Field clumps, field divisions, rooted cuttings and 2-inch pots.

Write for quotations.

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tually he was recognized by "certain scientists," and as a result of his meeting the French botanist, De Candolle, 1,200 of Mozingo's collection notations were copied, all that remained of the great scientific expedition.

The 86-page paper-bound study contains plates of the garden and scenes in Mexico and is the first portion of volume II of the *Chronica Botanica*, issued in the summer of 1947. It is published at \$2.50 by the *Chronica Botanica Co.*, Waltham, Mass., and Stechert-Hafner, Inc., New York city.

"OUR FLOWERING WORLD."

A new interpretation of the unfolding panorama of nature has been achieved by Rutherford Platt in his recently published book entitled "Our Flowering World." In clear, untechnical language and with many excellent photographs, the evolution of modern plants becomes a fascinating and instructive narrative. The eons of time represented by the intricate structural developments of our plants are reviewed on the stage of the world's history, so that in one breathtaking view, the reader is afforded an opportunity to glimpse the mammoth perspective of past and present. The existence of these modern plants as survivors of a climactic past is a phenomenon emphasized by the author in order to kindle a new appreciation of the flowers and forests which we may too casually consider a part of the landscape.

Conducting the reader on a sightseeing tour to explore the woods and fields, Mr. Platt calls attention to the forms of trees, the beauty of leaves and the luxurious colors in the everyday world about us. Then, through the telescope of present-day midgets such as the unassuming ferns, horse-tails, mosses and lichens, the reader views a prehistoric pageant in which some of these plants appear as trees 100 feet tall.

The " anvils of adversity" on which the plants of our day were forged through periods marking the coal age, drifting continents and the ice age are a striking prologue to the drama of our modern trees and forests, which traveled around the world to reach their present locations. The living cell, which has never ceased to demonstrate its extraordinary possibilities, is depicted as life's greatest invention, responsible for everything growing in our landscape. The development of the seed, which revolutionized plant life and introduced the age of flowering plants, was only one link in the chain of events that marked the evolution of



Growers of a complete line of deciduous and coniferous species.

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Lake City, Minn.

LOOKING FOR CHOICE LILACS?

In our collection of over 150 varieties are all of the top-ranking varieties, such as *Vestale*, *Edith Cavell*, *Willmott*, *Lucie Baltet*, *Marechal Foch*, *Monge*, *Mrs. Marshall*, *Etna*, *Dunbar*, *Congo*, etc.

Monge, *Mrs. Marshall*, *Etna*, *Marechal Foch*, *Lucie Baltet*, *Vestale*, *Edith Cavell*, *Firmament*, 50c each; \$4.00 per 10.

All other varieties, 25c each.

We can make up to your order potted grafts on Privet for Spring delivery.

Cash with order.

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Northern-grown Stock

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Wholesale growers of the best
Ornamental Evergreens,
Deciduous Trees,
Shrubs and Roses

Write for our current trade list.
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WE CAN SUPPLY

CHERRIES, 1-yr., 9/16-in., 11/16-in.

Montmorency, Early Richmond

PEAR, 716-in., 5/16-in.

Bartlett, Lincoln, Coreless

APPLE, 11/16-in., 9/16-in., 7/16-in.

Anoka, Black Ben, Dark Red Delicious, Grimes, Dark Red Jonathan, Lodi, Turley, Red Willow Twig, Yellow Delicious, York, Virginia Crab.

PEACH, all grades.

Alton, Belle of Georgia, Champion, Elberta, Early Elberta, Fair's Beauty, Golden Jubilee, Halehaven, Red Haven, Indian Blood, J. H. Hale.

PLUM, 9/16-in., 7/16-in., 5/16-in.

America, Burbank, Munson, Sapa, Waneta.

APRICOT and **NECTARINE**.

Also wide variety of specimen shrubs.

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RED RASPBERRIES

Hansen's **BUSH CHERRY**

PARADISE ASPARAGUS

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FARIBAULT, MINN.

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1-year Rooted Cuttings, 2 and 3-year Nursery Plants, all varieties; propagated from stock taken from our own productive farms. **Guaranteed True to Name.** SEND for **RIGHT WHOLESALE PRICES.**

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BLUEBERRY FARMS
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AMUR RIVER NORTH PRIVET CUTTINGS

Genuine Amur River North Privet cuttings, wood cut from proven "Mother Blocks." All cuttings hand sorted. \$2.25 per 1000 in lots of 5000 or more. Cash with order, packing free.

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Write for our variety list and prices.

Satisfaction guaranteed.

M. OLIVER FLOWER FARMS
P. O. Box 86 Tyler, Texas

plant life from fresh water algae to hardwood forests.

The most dynamic chapter of this drama of evolution was reached when a prodigious glacier appeared in Labrador. Rising like a monster two miles high, its tentacles pushed our forest southward. The plants traveled—fleeing from it, holding together like a vast community on the march. Then the big ice melted and these plants moved northward again, becoming our woods and fields as we see them today.

The grandeur of this spectacle is heightened by its focus on little things. Thus, the seed is the hero of the book. In the final chapters the amazing precision mechanism of the seed, the "footsteps of the forest," is revealed. After reading this, one will look at witch hazel, violet, water lily and many other shrubs and flowers and marvel at their perfection and the skill of their seeds in bringing them to our countryside.

Mr. Platt, who is also the author of "This Green World," has contributed 168 wonderful photographs, thirty-eight of them in full color, to make this book a truly fine document of the trees and flowers which inhabit our landscape. "Our Flowering World" is published by Dodd, Mead & Co., at \$6.

BULLETINS RECEIVED.

A 16-page booklet entitled, "Hot-water Tanks for Treating Bulbs and Other Plant Materials," has been prepared by W. D. Courtney, E. P. Breakey and Loyd L. Stitt and issued as bulletin No. 184 of the Washington agricultural experiment station, Pullman. Containing illustrations of various types of tanks used for the application of thermal water baths to control plant parasitic nematodes, the bulletin presents the fundamentals of tank construction and operation, including a reproduction of plans for a small-capacity tank.

Based on research at the western Washington experiment station, a study of narcissus diseases caused by fungi, viruses and nematodes has been published by the station, at Pullman, as bulletin No. 480 and is entitled "Narcissus Diseases in Washington," by Charles J. Gould. The twenty-eight pages include general control recommendations as well as illustrated discussions of the symptoms, importance and control of basal rot, smoulder, fire, white mold, scorch, mosaic, decline and bulb or stem nematode.

"DDT Treatments for Control of Mole Crickets in Seedbeds," by E. G. Kelsheimer, has been issued re-

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Established 1875

AMERICAN and
MOLINE ELM,
up to 2-inch caliper.

SOFT MAPLE,
up to 2-inch caliper.

PEACH and **APPLE**,
in carlots.

General line of
Shade Trees, Shrubs, Evergreens
and **Fruit Trees**.

BUDDED ROSES

TWO-YEAR, FIELD-GROWN,
BUDDED ROSES
OUR SPECIALTY

Ask for Wholesale List

Growers and shippers of dependable roses since 1920. Good assortment in Hybrid Teas and Climbers.

Ask for prices on individually wrapped and paraffined rosebushes. COLOR illus- trated, if desired.

See our ad in Nov. 15 and Dec. 1 issues.

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Boyd
NURSERY COMPANY
McMinnville, Tenn.

ORNAMENTAL SHRUBS
SHADE TREES, VINES
FOREST TREE SEEDLINGS
LINING-OUT STOCKS

COMPLETE ASSORTMENT OF

Evergreens, Fruit Trees, Shade
Trees, Roses and Linings-out Stock.

Write for complete list.

ONARGA NURSERY CO.
Onarga, Ill.

BURTON'S
HEADQUARTERS FOR
EVERGREEN GRAFTS, TRANSPLANTED
EVERGREENS, SHRUB LINERS.
RARE ITEMS YOU DO NOT
FIND IN MOST LISTS!
Write!
HILLTOP NURSERIES
CASTOWN, OHIO

cently by the Florida agricultural experiment station, Gainesville, as bulletin No. 434. Compiled from data on experiments made at the vegetable crops laboratory, Bradenton, the 20-page report describes the experimental technique and is augmented by tables which compare the results obtained from using specified amounts of DDT as well as various methods of application. Other tables demonstrate the effect upon germination of soil insecticides and the storage of DDT and fertilizer.

Intended for the homeowner or farmer who wishes to know which varieties of fruits and nuts to select for a small orchard in his particular section in California, and how to plant, cultivate and harvest his crops, is a new edition of "Home Fruit Growing in California," by W. L. Howard, published by the California agricultural extension service, Berkeley. Revised by Reid M. Brooks, the 84-page illustrated bulletin includes a geographical planting list of fruits and nuts suitable for a one-acre home orchard and discusses climate, site and soil as well as methods of irrigation, cultivation and spraying.

Entitled "Trees and Tree Planting for Posts, Windbreaks and Erosion Control," bulletin B-314 published by the Oklahoma agricultural experiment station, Stillwater, gives general planting suggestions and discusses the adaptation of species in relation to the eastern, north central and western regions of the state (exclusive of the panhandle) for this purpose. Twenty-four trees are described with suggestions for growing.

COLORFUL AUTUMN IN EAST TEXAS.

Autumn colors in east Texas the past fall were reported to be the loveliest in twenty years. Almost every tree in the region was transformed into colors ranging from canary-yellow to orange, vermillion, pink, scarlet, maroon and, in rare instances, deep purple. These rich colors were in striking contrast to the dark green of the pines and the magnolias. It is believed that the display may have been the result of an intensely hot, dry summer, followed by slow rains during October and November, with just enough light frost at the right moment to bring out the colors.

Particularly splendid were the colors in some of the roadside parks along east Texas highways where the state highway department has planted dogwoods, gums and oaks in juxtaposition to make a pattern of a wide variety of colors. Many east Texans

APPLE AND PEAR SEEDLINGS

Our seedlings have been thoroughly sprayed and are free from aphid and disease.

We are centrally located, and our shipping facilities are unsurpassed. Stock will reach you promptly for early grafting.

TWO-YEAR APPLE TREES (5 to 7 ft., unusually nice).

ONE-YEAR PEACH, CHERRY, PLUM and APRICOT.

Write for special low prices.

L. R. TAYLOR & SONS

Topeka, Kan.

Phone 35009 or 35019

SCARCE ITEMS

	Per 100
<i>Abelia Grandiflora,</i> 10 to 18 ins., heavy.....	\$10.00
4 to 10 ins., liners.....	6.00
<i>Azalea Calendulacea</i> , 2 to 3 ft., br., budded.....	35.00
<i>Magnolia Acuminata</i> , 9 to 12 ins., understock.....	6.00
<i>Hydrangea P. G.</i> , liners.....	6.00
<i>Hydrangea Arborescens</i> , liners... Welgele Eva Rathke, 12 to 18 ins. br.....	4.00
6 to 12 ins., liners.....	10.00
<i>Salix Babylonica</i> , 4 to 5 ft.....	7.50
18 to 24 ins., liners.....	15.00
<i>Lombardy Poplar</i> , 5 to 6 ft.....	5.00
Liners.....	5.00
<i>California Privet</i> , liners.....	2.00
10 per cent discount from above prices for full thousand lots. Immediate ship- ment. Check with order, please.	

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Route 2 McMinnville, Tenn.

FRUIT TREES

**HARRISON BROTHERS
NURSERIES**

G. Hale Harrison, General Manager
BERLIN, MARYLAND

PEACH TREES

Golden Jubilee, Halehaven, Red-
haven, Elberta and J. H. Hale in large
sizes. Will ship now or later.

NEWPORT NURSERY CO., Newport, Mich.

FRUIT TREES

Apple, Peach, Pear, Plum and Cherry.
Write for price list.

GOLDEN EAGLE NURSERY
Golden Eagle, Ill.

15,000 PEACH

10,000 APPLE

2,000 CHERRY, PEAR and PLUM

I and 2-year-old

A general line of Shade Trees,
Evergreens and Shrubs. We are
still booking orders for Apple and
Pear grafts for spring shipment.

Egyptian
Nursery & Landscape Co.

Farina, Ill. Phone 64

	Per 1000
Letham Raspberries, 1/2-in. end up.....	\$ 60.00
Letham Raspberries, No. 1, 3/16-in.....	48.00
Letham Raspberries, medium...	32.00
Chief Raspberries, No. 1, 3/16-in.....	48.00
Pixwell Gooseberries, 2-1.....	280.00
Chipman's Canada Red Rhubarb, No. 1, div.....	280.00

SUMMIT NURSERIES

Stillwater, Minn.

SMALL FRUIT PLANTS

Evergreens — Shrubs

Asparagus — Rhubarb

Send for Complete Trade List.

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NEW CARLISLE, O.

We wish to purchase...

Evergreens, Fruit Trees,
Shrubs, etc.

Send your surplus list to
THE PONTIAC NURSERY CO., Romeo, Mich.

NURSERYMEN and DEALERS

2-yr. Apple Trees, 15c and up. 1-yr. Peach, 15c and up. Transplanted Chinese Elm, 10c and up. Good Shrubbery, 10c and up. 2-yr. Grape, 5c and up. Red-leaved Barberry, Privet and Berry Plants. Also good Bermuda Grass Roots in large quantity.

Really nice, collected Native Red Cedars; beautiful tops and good roots, at following low prices:

5 to 10 ins., \$20.00 per 1000; 10 to 15 ins., \$35.00 per 1000; 15 to 24 ins., \$7.50 per 100; 2 to 3 ft., \$12.50 per 100; 3 to 4 ft., \$17.50 per 100.

Please rush your order with check as soon as possible, as we will start shipping these about Mar. 1, or maybe the last of Feb. We will ship until May 10. We had to send back many orders the past two seasons because we did not have time to fill them.

Write for low prices.

ROLLERS WHOLESALE NURSERY

Rogers, Ark.

TO THE TRADE

We offer heavy, 1 and 2-year Apple and Peach, especially heavy Apricot, Plum, Quince and June-bud Peach.

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WE OFFER... Our General Line of SMALL FRUIT PLANTS

Let us quote on your requirements.

L. J. RAMBO'S WHOLESALE NURSERIES

Bridgman, Michigan

GRAPE CUTTINGS

Price per 1000.
Concord, \$5.00; Niagara, \$5.50;
Delaware, \$6.00.
Wire-bound, 100 per bunch, expertly cut,
Packing free. Cutting started Decem-
ber 1.

Place orders at once.
PAW PAW PLANT CO., Paw Paw, Mich.

VEGETABLE PLANTS

Best Varieties — Order Today

CABBAGE - 2000 for	\$3.50
ONIONS - 6000 for	4.85

W. G. FARRIER PLANT CO.
Box 195 Omaha, Texas

drove to the state park near Daingerfield, which was conceded to be perhaps the most fantastically beautiful array of colorful trees in all east Texas. Other persons claimed that the peculiar mixture of volcanic ash, magnesium and iron in selected areas of Cass, Bowie and Marion counties provided a wider range of reds and yellows. Others, however, insisted that in order to appreciate the scarlets, crimsons and yellows it was necessary to have a background of dense tall pines such as Harrison, Panola or Gregg counties offered.

Beautiful rural residential homes along the highways of east Texas were set off with a concentration of native gums, oaks and pines. Often steel derricks rise above the trees, reminders of the oil which has brought wealth to the inhabitants.

The remarkable autumn display was expected to last until the first killing frost, which usually occurs about December 15.

USE 2,4-D FOR WEEDS IN STRAWBERRY BEDS.

Small weeds in strawberry beds can be eliminated by the use of a 2,4-D spray, it has been shown through research conducted by R. F. Carlson and J. E. Moulton, specialists in horticulture at the Michigan State College and Chatham agricultural experiment stations.

The spray was applied at half the commonly recommended strength for weed control when the weeds were as much as two to three inches tall. Although strong enough to destroy weeds, the spray did not injure the strawberry plants, which are fairly resistant to low concentrations of 2,4-D, with some varieties more resistant than others. The new Robinson variety, now widely grown in Michigan, is more resistant than the old stand-by, Premier.

Timing of the spray application is important, since the young flower buds and flowers on strawberry plants are sensitive to 2,4-D. The second-year bed, or fruiting bed, should not be sprayed until after harvest. The first-year bed may safely be sprayed at any time, since no crop is harvested during that year.

AZURE ACRES have recently been started by O. L. Strang at 8409 Lewis road, Mount Morris, Mich., specializing in blueberries.

MRS. MARY K. MOULTON has recently opened Thornapple Place, a landscape nursery, on Route 1, Box 88D, St. Charles, Ill.

BERRY PLANTS AT WHOLESALE

Strawberry Plants
Regular or Everbearing

Raspberry Plants
Red, Black or Purple

Blackberry Plants
Alfred or Eldorado

Dewberry Plants
Lucretia

Boysenberry Plants
Thorny or Thornless

Grapevines
Red, White, Blue or Black

Blueberry Plants
Popular hybrids

Red Currants
Wilder and Perfection

Red Rhubarb
Victoria

Asparagus
Washington or Paradise

Price list on request

WARRENVILLE BERRY FARMS

Growers—Distributors
30 miles west of Chicago
Phone 3141 Warrenville, Ill.

GRAPE ROOTS

Grown on gravel land.
(There are none better.)

Catawba, Delaware, Worden,
Niagara, Caco, Brighton, Fredonia,
Agawam, Moore's Early and Concord.

Send us your list of wants for immediate quotations.

CHAMPION NURSERIES

Perry, O.

PECAN — WALNUT

Japanese Persimmon; Fig, bears first year. Blueberry, Satsuma Orange and Chestnut.

DELTA NURSERY
RT. 4 Jackson, Miss.

RED RHUBARB

Chipman's Canada Red
KEELER'S GARDENS
Sioux Falls, So. Dak.

GRAPE CUTTINGS

CONCORD AND FREDONIA, \$4.00 per 1000, F.O.B. here. Tied with wire, 100 to bunch. Guaranteed true to name. Cut from our young, thrifty vineyard by experienced workmen.

IDEAL FRUIT FARM, Stillwell, Okla.

APPLE SCIONS

Let us have your want list. We have a good supply of leading varieties.

GOLDEN EAGLE NURSERY

Golden Eagle, Ill.

**LOCAL AD PROMOTES
A. A. N. GIFT CERTIFICATE.**

Seven nurseries in the vicinity of Richmond, Va., have sponsored a $3\frac{3}{4} \times 6$ -inch ad in their local newspaper publicizing the American Association of Nurserymen gift certificate plan. Run three days each week, the ad, which carries at the top a reproduction of the new A. A. N. seal and the caption, "Give Plants This Christmas," includes the following message:

"A gift of lasting beauty for the homeowners and garden lovers on your Christmas list.

"Shop the new easy way with the American Association of Nurserymen's Gift Certificates. Any member of the A. A. N. can sell you gift certificates in any amount from \$5 up which can be sent to your friend, mother or wife, for Christmas, Mother's Day, Birthday or Anniversary.

"Certificates are redeemable locally or at over 1,100 Bonded Nurseries from coast to coast and in Canada, any time within one year. The recipient can select his own plant or plants, freshly dug and delivered by his favorite local nurseryman.

"For information and helpful service, call or write any of the following local members of the American Association of Nurserymen."

Appearing at the bottom of the ad are the names, addresses and telephone numbers of the seven cooperating nurseries: Colonial Farms, Inc., Gresham's Nursery, W. T. Hood & Co., Inc.; John O. Williams Nursery, Laird's Nurseries, Southside Nurseries, all of Richmond, and Watkins Nurseries, Midlothian.

Novel Mailing Piece.

A clever promotional folder that might be especially adaptable as a mailing piece to retail customers is the folder of five triangular-shaped trees, cut from green paper and arranged so that they may be folded one on top of the other or strung out, used by Gresham's Nursery, Richmond, Va. The trees progress in order from the smallest to the largest, and printed on them from left to right are the words "Plant—Trees and Evergreens — They Grow — Into Greater — Beauty and Value." The name, Gresham's Nursery, appears beneath following the phrase "Cultivate a Love for Nature." On the reverse side these words are printed on each tree beginning with the largest: "Gresham's Nursery—Grow Better Evergreens — Flowering Shrubs — Shade Trees — Roses, Azaleas." Below the telephone number, address and location of the nursery are given.

DRIEHUIZEN BROTHERS

Lisse, Holland

American address: Room 605, 44 Whitehall St., New York, N. Y.

WHOLESALE BULB GROWERS

Carload service to all principal cities in the midwest.

THE HOMESTEAD NURSERIES

H. G. BENCKHUYSEN — Proprietor — BOSKOOP, HOLLAND

FOR BETTER VARIETIES OF
Azaleas, Rhododendrons, Magnolias, Peonies, etc.

Broadway Station

GULDEMOND'S

Newport, R. I.

Holland-Grown Trees, Shrubs, Evergreens, Perennials, Forcing Plants.

Write for HOLLAND PLANT LIST.

Representing Guldemond & Co., Boskoop, Holland.
Since 1874.

Peter Grootendorst J. M. Son

BOSKOOP, HOLLAND

Exporters of Nursery Stock since 1898

Rhododendrons, Azaleas, Shrubs, Trees, Peonies, Liners, etc.

Catalog free on application.

FRUIT TREES

East Malling Stocks

Rosebushes and Herbaceous plants

Buy from a firm specializing in
exporting plants.

PEPINIERES VANVERT FRERES & FILS

S.P.R.L.

Obourg, Belgium

Ask for quotations on items you
need, indicating quantities.

Holland-Grown Nursery Stock

Shrubs and Trees,
including liners.

Rhododendrons and Azaleas

Hardy Perennials

Peonies

NOVELTIES IN ALL LINES

Ask for wholesale catalog.

F. J. Grootendorst & Sons

Boskoop, Holland

Growers and exporters since 1903.

For
Imported and Domestic-grown

BULBS and ROOTS

etc.

WM. VAN ZONNEVELD & SON

Bulb Specialists

Holland, Mich.

VUYK VAN NES

HOLLAND

Originators of Azalea Vuykiana (Hardy Dutch Hybrid Azaleas), large-flowering, bloom with foliage; in one white variety and several in nonfading colors.

Propagators and growers of choice nursery stock. All types of Azaleas, Rhododendrons and other broad-leaved Evergreens, Conifers, Roses, Shrubs and Perennials.

Exports to the U. S. A. receive special preparation, cleaning and packing for best results. All stock carefully graded. New York office handles all import details at no extra cost.

Please direct all your correspondence to:

140 Cedar Street New York 6, N. Y.

VUYK VAN NES NURSERIES

HOLLAND PEAT MOSS

Best quality, large bales, properly packed by a group of the largest producers operating extensive highland moors and well equipped mills. Carlots of 300 bales or more only. Write.

HOLLAND BURLAP SQUARES

Uniform quality, two tape edges for tying. Made by the largest mill in Holland, whose exclusive distributors we have been since 1921. Stock on hand and being made. Order now for prompt or later delivery.

HALF MOON MANUFACTURING & TRADING COMPANY, INC.

90 West Street New York, N. Y.

LIVE OAK TIP MILDEW.

The tip mildew, or witches'-broom disease, of California live oak trees is increased by early spring pruning and fertilization. These are common practices which should be discontinued or avoided, according to P. A. Miller, writing in a recent issue of the California Agriculture, published by the University of California agricultural experiment station. Mr. Miller is associate professor of plant pathology and associate plant pathologist at the Los Angeles experiment station.

Trees of this kind may appear to be weak or in poor condition in January or February if the tip mildew disease attacked them severely during the previous year. The leaves which were produced during the previous spring either fall or are shed normally toward the end of the year. The only mature leaves remaining on the trees are those which grew during the summer or were produced during the shorter, less active growth period of the preceding fall.

As a result of the severe mildew attack, witches'-brooms may be abundant throughout the trees. In autumn they are mostly dry, brown, dense masses of stunted, distorted shoots and leaves. In the active stage they are enlarged or swollen and covered with a powdery white growth of fungus. They may comprise the terminal growth of normal shoots or may involve part or all of the growth from an old broom. Many entire shoots or suckers originally from the trunk or main limbs of the tree may be stunted and distorted into witches'-brooms.

The thin foliage, the apparent lack of normal growth and the many clearly visible witches'-brooms give the impression that these trees are lacking in vigor.

Pruning to improve their appearance and feeding to promote growth would seem to be logical recommendations for the treatment of such trees. Removal of the old brooms in pruning would seem to eliminate some sources of mildew infection.

Spring pruning of trees severely affected by tip mildew may sometimes be recommended in the mistaken belief that the removal of the old diseased growth will materially reduce the disease on the new growth which develops later. The application of high nitrogen fertilizers is advocated to promote growth at that time and restore the vigor and health of the trees.

The California live oak trees normally produce their greatest flush of growth during February and March.

TREE ROSES

Now digging for bare root shipment, No. 1 Grade Tree Roses in the following varieties:

Charlotte Armstrong	Katherine T. Marshall	Pinocchio
Countess Vandal	Los Angeles	Pres. Hoover
Crimson Glory	Lowell Thomas	Rose Marie
Eclipse	McGredy's Ivory	Rubaiyat
E. G. Hill	Mme. Chiang Kai-shek	Santa Anita
Grande Duchesse Charlotte	Mme. Henri Guillot	Show Girl
Hadley	Mrs. E. P. Thom	Talisman
Heart's Desire	Peace	Texas Centennial
K. A. Victoria	Picture	

IXL understock, 36-inch standards, good caliper; two buds in well developed heads. Prices F. O. B. our plant. Boxing at cost.

	Popular Varieties	Patented Varieties
5 to 500.....	\$1.75	\$2.25
500 to 1000.....	1.65	2.15

Write for prices on larger quantities.

Please order not less than 5 of any one variety.

Your order now will assure your customers of their favorite varieties for spring planting.

WEEKS

WHOLESALE ROSE GROWERS

All Growing Fields in Ontario and Chino Valley, California.
Mail Address: O. L. Weeks, RFD 3, Box 323, Santa Ana, Cal.

HORSE-RADISH PLANTING STOCK

100,000 ready for immediate shipment or we will book your order for Spring delivery.

100 to 900	1000 to 9000	10,000 or more
\$2.00 per 100	\$17.50 per 1000	\$16.00 per 1000

Minimum order 100; cash with order or satisfactory trade references. No packing charges; quotations F.O.B. Snohomish.

STEUBER NURSERY & FLORAL CO.

308 Third St.

Snohomish, Wash.

The mildew fungus attacks only the tip growth of new shoots and leaves. Weather conditions of temperature and humidity are most favorable for the infection of this new growth at this time of the year. Ample soil moisture for sustained growth during the spring months may be provided by late rains during some years or by irrigation or drainage water.

Severe pruning or liberal applications of high nitrogen fertilizers result in increased growth of young shoots and leaves susceptible to infection by the mildew fungus.

Oak trees susceptible to this disease if pruned or fertilized at this season will have more infected leaves and tip shoots than trees which were neither pruned nor fertilized. Those which are both pruned and fertilized at this time will be most severely attacked by the mildew fungus.

Many park, garden and roadside oak trees which have been severely

pruned at this season of the year have been observed to be more seriously affected by this mildew than they were in previous years. The same results have been observed to follow spring fertilization of trees in the field.

The transfer of seedlings from crowded flats or nursery rows to fertile soils in pots or in the field will likewise provide stimulation of new growth and a consequent increase in mildew infection.

Experimental work upon the various possible control measures for this disease has been in progress since 1939. After two years' trial, spring pruning was abandoned as an aid to mildew control. The results showed that the trees requiring much pruning to remove all of the old diseased growth or brooms had more mildewed tips and leaves during the following flush of growth than had been noted prior to pruning.

In the fall of 1939, a group of

twenty trees that were about 14 years old were fertilized with a mixture containing 7.63 per cent nitrogen. Each tree received about 1.1 pounds of nitrogen. During the eight months following this fall application of fertilizer no differences either in the amount of growth or mildew between the fertilized and the unfertilized trees could be detected. These results indicated that a light application of nitrogen at this season of the year had no adverse effect.

In February, 1947, five young oak trees about 5 years old and approximately equal in their susceptibility to mildew were given an application of ammonium sulphate. Each tree was given an amount equivalent to one pound of nitrogen.

Counts of the mildewed tip shoots, or witches'-brooms, which developed during the spring flush of growth showed an average of fifteen more brooms per tree than on a comparable group of five trees which had not been fertilized.

A similar group of five trees which had been pruned but not fertilized developed approximately the same average number of mildewed tips per tree as those that were fertilized but not pruned.

Both the pruning and fertilization of these trees should be deferred until late in the summer or early fall months. The weather conditions at that season are less favorable for the mildew fungus. Growth is less active and of shorter duration. There is less young growth of shoot tips and leaves exposed to mildew infection.

CALIFORNIA NOTES.

Two new specialists in deciduous fruits, who have recently become members of the staff of the college of agriculture, University of California at Davis, are Dr. William H. Griggs, an expert on pollination problems, and Dr. William H. English, an authority on diseases.

The Macco, Morrison-Knudsen Co., which has the contract for moving the soil to fill the San Francisco airport, has been sued by a number of nurserymen and gardeners in the San Bruno area for damages to growing plants caused by dust blowing off the trucks hauling the soil. Several million yards have already been transported. The latest suit has been brought by Victorio and Maria Lansa, who claim damages to the extent of \$14,000.

Bert Edwards, of the Pacific Nurseries, Colma, reports the arrival of Garry Allen Edwards, October 3.

The University of California at Davis is beginning a long-term

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»SHIPPED PREPAID TO DESTINATION«

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REPRESENTATIVE VARIETIES INCLUDE:

PHILADELPHUS VIRGINALIS	8-10 in.	\$ 15 per 100
(Mock orange) Large white fragrant flowers in spring and summer	24-30 in.	45 per 100
	3-4 ft.	75 per 100
	4-6 ft.	100 per 100
WEIGELA BRISTOL RUBY (Pat.)	4-6 ft.	25 per 100
A new deep red flowered weigela. Dark green foliage	18-24 in.	50 per 100
	24-36 in.	100 per 100
SPIREA REEVESIANA	4-6 in.	15 per 100
Double bridal wreath clusters of double white flowers in spring	24-30 in.	35 per 100
	3-4 ft.	125 per 100
KOLKWITZIA AMABILIS	3-4 in.	15 per 100
(Beautybush) Bears an abundance of small pink tubular flowers	15-18 in.	35 per 100
	3-4 ft.	125 per 100
SYRINGA PERSICA LACINIATA	4-6 in.	15 per 100
(Cut leaf Persian Lilac) Large sprays of lavender flowers	2-3 ft.	40 per 100
	3-4 ft.	125 per 100

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Shipments now or later. Strong, branched, 4 to 6-in. dish garden size, extra-strong, nursery lining-out. 6 to 10 ins. \$6.00 per 100, \$50.00 per 1000. F.O.B. Los Angeles.

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California-grown, certified stock.

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YAKIMA VALLEY-GROWN SEEDLINGS

None grown finer than these fine, fibrous, well rooted and well graded seedlings.

	Apple	Pear
	Per 1000	Per 1000
1/4-in. and up, br.	\$30.00	\$32.00
1/4-in. and up, str.	28.00	
No. 1, 3/16 to 1/4-in. br.	25.00	28.00
No. 1, 3/16 to 1/4-in. str.	25.00	25.00
No. 1, 3/16 to 5/16-in. str.	25.00	
No. 2, 2/16 to 3/16-in. br.	18.00	18.00
No. 2, 2/16 to 3/16-in. str.	18.00	18.00
No. 3, about 2/16-in. str.	12.00	14.00
No. 1, liner or stub.	18.00	
Chinese Elm, seedlings.	Per 1000	
3 to 4 ft.	\$45.00	
4 to 5 ft.	60.00	
Chinese Elm, transplants,	Per 100	
5 to 6 ft.	\$65.00	
6 to 8 ft.	80.00	
8 to 10 ft.	110.00	

Use letterhead.

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Pioneer seedling growers on the Pacific Coast since 1914.

Specializing in fruit tree seedlings. **Angers Rooted Quince Cuttings, Chinese Elm Seedlings and English Privet.**

We aim to please with quality stock.

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1-yr., field-grown seedlings, row run, \$30.00 per 1000; \$4.00 per 100.

Liberal count. No packing charge if check accompanies order.

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9 to 12 ins., \$10.00 per 100, \$75.00 per 1000. Carefully gathered. Extra well packed.

COASTAL GARDENS Sheridan, Ore.

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64 pages, 3000 names, 25¢ per copy
American Nurseryman Chicago

project to study the effect of nematodes on plant growth as well as the value and need of methods of control and the costs of the pests to the farmers and nurserymen of the state.

H. Harts has added nursery stock and bedding plants to his garden supply and tool-sharpening business, at Seventeenth and Taraval streets, San Francisco.

H. P. McKoon has taken over the small package fertilizer business of the Atlas Fertilizer Co., Colma. Dan Corbin, who established the business about 1944, is devoting his time to land-moving operations and the handling of bulk fertilizers.

Donald Hoover is now calling on the trade for the Kerr-Langen Seed Co., San Mateo. Mr. Hoover is a partner in the business and was connected with the seed trade for several years previous to his military service.

Milking the clouds is becoming a problem for interstate authorities. This is the process of dropping dry ice into clouds and causing rain to fall in arid regions or in sections where rain is needed. If such a procedure becomes a common practice in California, it is believed that deciding to whom such rain belongs would become a real legal problem. The process could affect the entire economy of states east of California at present entirely dependent on such rains, which might then never reach the inland. Rain, Inc., is the name of a newly organized nonprofit association of Santa Clara farmers, which has been organized for the purpose of making rain in this manner.

Kay Williams has added a line of garden supplies to his feed and supply business, at Willows.

Mrs. Mary Warburton, 76, of the Heather Nursery, Colma, was taken to the South San Francisco hospital after she had fallen and broken both knees and her lower leg. The Heather Nursery was one of the first in the area to grow heather for extensive shipment eastward as a cut flower item.

Virgil Cripe, of Rancho Del Fortuna, Delano, is the father of a new son.

The November meeting of the San Joaquin Nurserymen's Association included a tour of the Shell Oil Co. agricultural laboratories. Frank Herbert, of the laboratory, in a welcome address to the group, explained that the institution comprises 142 acres and has an operating budget of about \$300,000 per year.

At the November meeting of the San Joaquin Nurserymen's Association, which was held at Modesto, funds were raised by voluntary contributions of the members to provide



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and a general assortment of other nursery stock.

Ask us to put your name on our mailing list. (Use your letterhead.)

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20 varieties. Rooted cuttings for Spring delivery.

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Rooted cuttings for delivery now until late Spring.

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Aurora, Ore.

NOTICE

Limited production makes it impossible to book orders for new customers.

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PEAT MOSS

Finest Quality,
Sun-dried Canadian Sphagnum.

WM. A. JOHNSTON
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presents and entertainment for the Christmas party of the association, held December 13 at Merced.

W. B. B.

OPPOSE CASH DISCOUNTS.

Most manufacturers are opposed to the practice of granting discounts to buyers who pay cash, according to the National Industrial Conference board. However, there is a substantial minority which considers cash discounts justifiable as a means of reducing collection costs of bad debt losses.

"The predominant opinion is that cash discounts have no economic value, but are a carry-over from earlier days when money was scarcer," the board stated. "In those days credit risks were greater and collection procedures more costly than they are now."

Cash discounts are too high a price to pay for working capital at a time when there are record low money rates, many of the manufacturers asserted. Some who have been granting discounts said that they would discontinue the practice if it were not for concern over antagonizing customers.

Advocates of the cash discount contended that any saving made through abolition of its reduction would be offset by increased collection costs. Some said discounts have aided materially in cutting bad debt losses and serving as a barometer of credit risks.

"A few executives said the cash discount actually is a psychological trick," the board reported. "They said its cost is figured into the price of the items sold, and that there is no real saving to the buyer who avails himself of it. What really happens," these executives asserted, "is that the late payer is penalized by the loss of discount."

A large number of the manufacturers surveyed said they had no idea of the basis on which their cash discounts were established. However, most of them expressed the opinion that the discount should be close to current prevailing interest rates.

THE Peter J. Booy Nurseries, formerly at Mendham, N. J., are now located on Route 1, Box 197, San Jacinto, Cal.

HARRY T. ZAUNMILLER, formerly associated with the Walla Walla Floral Co., Walla Walla, Wash., has opened Harry's Nursery, a nursery and landscaping firm, on Route 3, Box 354, Walla Walla.

PORTLAND WHOLESALE NURSERY CO.

306 S. E. 12th AVENUE

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PORLAND 14, OREGON

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SHADE AND FLOWERING TREES
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Grown right and packed right.
Combination carloads to Eastern distributing points will save you on freight.

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Two-year—Nursery-grown—

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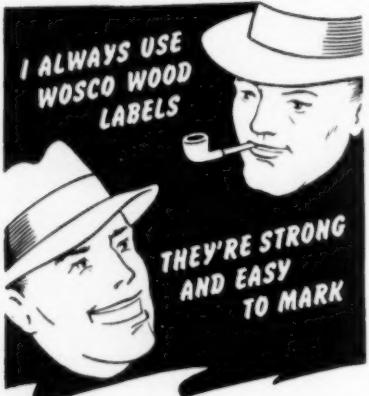
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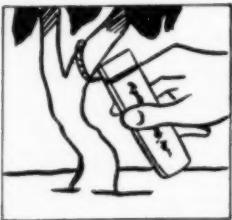
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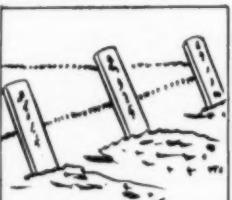
From the Ponderosa Pine forests of Oregon come these smoothly surfaced wood labels. Wosco Labels can be purchased either plain or painted, in large amounts or in 25 cent packages. And if you need printed labels, any Wosco dealer can supply you.



The double copper wire makes Wosco Labels easy to tie onto trees or shrubs. They will withstand bad weather and rough treatment.



Wosco pot labels are strong and can be easily pushed into the soil of pot or greenhouse flat for marking the variety. Smooth surface is easy to mark.



Write the variety on a smooth Wosco garden label and push it into the soil to mark rows or area. Wosco Labels can be saved and used over and over again. If your dealer cannot supply you write Wood Specialties Company, 2515 S.E. 25th Avenue, Portland 2, Oregon.



WOOD
LABELS

PROPAGATION UNDER FLUORESCENT LIGHT.

[Continued from page 22.]

rooting medium of two parts of peat and one part of vermiculite. Excellent rooting was also obtained in shredded sphagnum or in peat alone, if watered sparingly. Cuttings of cinchona placed in flats of shredded sphagnum, washed flue ash and vermiculite were rooted heavily in one month under continuous illumination. During this period, the cuttings in the sphagnum and the flue ash received no watering or other attention. The cuttings in vermiculite were watered only once, but probably this was unnecessary. In this system of propagation, the amount of attention required can be so little that systems of automatic watering may have a doubtful usefulness.

As previously noted, extremely high voltages are required with cold cathode lighting, and great care is necessary in its use. As a matter of fact, the moisture conditions in any propagating house necessitate considerable caution where electrical appliances are involved.

The production of good seedlings under fluorescent lamps requires considerably higher light intensities than are needed for the rooting of cuttings, but does not involve any unusual difficulties. From 600 to 800 foot-candles should be sufficient to produce excellent seedlings of the sun-loving annual vegetable and flowering plants, although good seedlings of some shade-loving species have been grown at less than half this intensity. Light intensities of about 800 foot-candles prevail immediately beneath the two tubes of a double watt fixture with reflector and diminish to about 450 foot-candles at one foot from the tubes.

With two or four tubes in use, the highest quality of seedlings resulted from raising the seed pans or flats to within a few inches of the lamps. However, the area within one foot of the tubes was usable with good results, except at the ends, where the light production of the tubes in current use is somewhat low.

Satisfactory growth of seedlings can be obtained only under a reasonably well balanced light, containing sufficient radiation in the blue-violet end of the spectrum. Since the objective is not entirely the maximum growth rate, but also the ability of the seedlings to transplant well, the combination of lamps which will approach this ideal most closely cannot be determined without extensive transplanting tests.

A combination of white and day-

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Francis A. Robinson, president, is a partner of Robinson & Barnham, member of American Association of Nurserymen in active professional landscape practice for 36 years.

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Contact us if you want to buy or sell a profitable nursery business.

Excellent opportunity for young man with good education, nursery and landscape training and experience, and plenty of ambition.

Long Island nursery established over 50 years ago. Serving high-class retail and landscape contractor trade, specializing in specimen stock.

Work will consist of contacting prospects and customers on leads, landscape designing, supervision of jobs and office work. Permanent position with a future. Good salary and working conditions.

State background and all qualifications in first letter and be prepared for interview. Write MR. GEORGE L. CONKLIN, Box 15, E. Patchogue, N. Y.

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Graduate landscape architect or graduate in nursery field, experienced in sales work, to become associated with established, expanding Atlanta florist. Investment required other than ability. Integrity and hard work. Address Box 531, care of American Nurseryman.

HELP WANTED

Nurseryman, landscape architect, good all-around man capable of soliciting, selling, designing and planting small jobs. Salary and commission. This is a splendid opportunity. Southern location; house available. Address Box 532, care of American Nurseryman.

FOR SALE

Nursery, 26-year-old business; approximately 5½ acres; 6-room bungalow and packing shed. \$12,000.00 inventory. Located at Pana, Ill. Write PANA NURSERY, Box 52, Pana, Ill.

FOR SALE

Greenhouse, nursery and dwelling, \$6000.00. Cash or terms. Special opportunity for landscaper and nurseryman. Good spring plant business. Only greenhouse in county.

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WANTED—Small greenhouse, 300 to 500 sq. ft., curved eaves. Write full particulars. ROARING RIVER FLOWER SALES, 45 East 17th St., New York, N. Y.

light tubes produced excellent seedlings of normal appearance. The 3500-degree white tubes produced excellent seedlings. Daylight tubes alone produced a somewhat slow but well hardened type of growth. Thus, by using various colors alone or in various combinations, the characters of the seedlings can be influenced considerably.

Temperature is a critical factor in the production of good seedlings under artificial light. The air temperature must be kept down to a reasonable level so that the light requirements of the seedlings are not increased beyond the available illumination.

Under the more favorable colors or combinations of colors, seedlings of various types of plants have been excellent in quality. Thus seeds of cabbage, kale, head lettuce, pansies, stocks and wallflowers were sown in the large opaque propagating house under 40-watt fixtures, using sphagnum moss as a germinating medium. In five weeks the cabbage plants were three to four inches high, having two large leaves and one or two smaller ones. The pansy plants were one and one-half inches high and had from three to five leaves. The plants of stocks and wallflowers were one inch high with four to eight true leaves.

Tomatoes, snapdragons, petunias, zinnias, marigolds and sweet peppers germinated well and often made a surprisingly rapid growth, even when nutrients were not applied to the sphagnum moss. These seed pans were held close to the tubes at first, but were lowered as the seedlings elongated. In all stages of germination and growth these seedlings did not differ in any noticeable way from seedlings started and grown in the greenhouse.

FLORICULTURE GROUP INITIATES MEMBERS.

Six candidates were initiated into the Epsilon chapter of Pi Alpha Xi, a national honorary floriculture fraternity, at Ohio State University, Columbus, during the fall quarter. The initiation was held November 25 at the Worthington Inn, Worthington, and a banquet, at which thirty members were present, followed.

New members of the fraternity are Ralph Beach, Marysville, Kan.; Ibrahim Fanmy, Cairo, Egypt; Albert Quinn, Oxford, O.; Donald Hillenmeyer, Lexington, Ky.; Hiram Johnson, London, Ky., and Max Quillen, Waynesboro, Va.

A NEW greenhouse has been built by the Robinson Greenhouses & Nursery, Bastrop, La.

Standardized Plant Names

Lists approved scientific and common names of plants in American commerce or use.

90,000 entries

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"Supreme" Quality
SEEDS — PLANTS — BULBS
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SEEDS

Collectors of Tree, Shrub and Wild Flower Seeds
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E. C. MORAN Stanford, Mont.

PEACH PITTS 1947 CROP
Southern-collected; high germination.
Small, about 6,000 to bu., \$3.50; medium, about 5,000 to bu., \$3.00. Sample on request.
Also fruit trees, grapevines, nut trees and ornamentals.

RIVERDALE NURSERIES
Riverdale, Ga.

CLASSIFIED ADS

25 cents per line.

Minimum order, \$2.00.

AZALEAS

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For forcing or landscape planting.
Coral Bells, Hinodegiri, Salmon Beauty, Salmon Queen, Snow, Haze, Christmas Cheer, Mme. Pericot, Peach Blow, 30,000 beautiful, stocky plants grown in full sun.

Per 100 Per 1000

6 to 8 ins., each.....	\$0.70	\$0.65
8 to 10 ins., each.....	.90	.85
10 to 12 ins., each.....	1.15	1.00

Balls burlapped if desired at 10¢ each additional.

Packing, if necessary, extra. 25¢ at 1000 rate. Order now for fall.

THE TANKARD NURSERIES

Exmore, Va.

AZALEA HEXE AND HINODEGIRI

Well budded plants	Each	
4 ins., 50 or more.....	\$0.40	
4 to 6 ins., 50 or more.....	.50	
6 to 8 ins., 50 or more.....	.60	

Less than 50, 10 per cent plus.

Cash with order, crating free. F.O.B. Nursery.

RICHARD P. RESSEL

Milino, Ore.

AZALEAS—ROOTED CUTTINGS

Hinodegiri, Coral Bells, Snow, Amoena, Pink Pearl, Salmon Beauty, Lefidolia alba, \$6.00 per 100; \$50.00 per 1000.

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Norman Ave., Riverside Park, Riverside, N. J.

AZALEAS, RHODODENDRONS, BOXWOOD
Write for our fall trade list of plants for landscape planting, forcing and lining out.

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PIXWELL GOOSEBERRIES, SCHWAB GOOSEBERRIES and LATHAM, CHIEF NEWBURGH and RUDDY RASPBERRIES and ARROWHEAD STRAWBERRIES. Pixwell Gooseberry, leading variety, very productive, berries large, super quality, sweet, easy to pick; 2-yr. heavy, \$25.00 per 100; 2-yr. light, \$15.00 per 100. Schwab Gooseberry, new seedling, world's largest gooseberry, berries often 1½-in. in diameter, highest quality, hardy, very productive, 1-yr. heavy, \$7.50 per 10; 1-yr. light, \$5.50 per 10. All raspberries, No. 1 heavy, \$30.00 per 1000. Arrowhead, New Minn. No. 1118 Strawberry, June bearer, very firm, extremely hardy, highest quality, very large, heavy bearer, very heavy plant maker: \$30.00 per 1000. 10 per cent discount for cash on all stock.

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ARROWHEAD, the new Minnesota June bearing Strawberry, exceptional for quality and hardness; prolific and productive. 100 for \$4.00, 1000 for \$25.00.

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BLUEBERRY PLANTS—State inspected, 1-yr. rooted cuttings, 3 to 9 ins., Jersey, \$20.00 per 100; Pemberton, \$25.00 per 100; Stanley, \$25.00 per 100, 2-yr. Rubel, \$26.00 per 100; 3-yr. Rubel, 18 to 24 ins., \$35.00 per 100.

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BLUEBERRY ROOTED CUTTINGS

Rancocas, Rubel and Jersey

\$17.50 per 100, \$150.00 per 1000.

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\$30.00 per 100, \$250.00 per 1000.

60 at 100 rate, 500 at 1000 rate.

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STRAWBERRY PLANTS—Certified. Leading varieties, grown on the Cumberland plateau. Nurserymen, write for wholesale price list.

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100,000 LATHAM RASPBERRY PLANTS, No. 1 suckers, \$30.00 per 1000.

C. H. BENEDICT

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NEW ARROWHEAD STRAWBERRY PLANTS will be in demand this spring. We still have a limited supply of good plants.

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Write for complete list and prices.

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GLADIOLUS BULBS

Excellent quality.

First Size.

	Per 1000
5,000 Bagdad	\$16.00
2,500 Blaze	23.00
14,000 Betty Snow	17.00
14,000 Betty Nuthall	17.00
2,000 Bit o' Heaven	18.00
15,000 Beacon	20.00
5,000 Charles Dickens	20.00
15,000 Dr. F. E. Bennett	20.00
5,000 Early Purple	19.00
10,000 Flaming Sword	17.00
4,000 Golden Dream	20.00
5,000 Gold Dust	21.00
20,000 Jumbo, mixed	20.00
14,000 King Lear	25.00
5,000 King Arthur	18.00
30,000 Maid of Orleans	20.00
4,000 Marg. Fulton	17.00
10,000 Marg. Beaton	24.00
8,000 Minuet	35.00
5,000 New Europe	35.00
5,000 Peggy Harbor	27.00
15,000 Picardy	22.50
2,000 Paradise	18.00
16,000 Rosa Van Lima	22.00
10,000 Snow Princess	26.00
5,000 Shirley Temple	23.00
5,000 Vagabond Prince	25.00

Second Size

	Per 1000
5,000 Beacon	\$17.00
15,000 Maid of Orleans	17.00
2,000 Minuet	30.00
5,000 New Europe	30.00

Third Size

	Per 1000
5,000 Beacon	\$14.00
15,000 Dr. F. E. Bennett	13.00
5,000 Betty Snow	10.00
10,000 Flaming Sword	10.00
12,000 Minuet	25.00
10,000 Maid of Orleans	14.00
5,000 New Europe	25.00
20,000 Picardy	14.00

CASH or C.O.D.

HOWARD STREET PANTRY GARDENS

Kalamazoo 99, Mich.

LILIES

Hardy northern-grown planting stock. Grown from seeds.

	Per 1000
Regale	\$15.00
Ten. Coral	15.00
Ten. Golden Gleam	20.00
Concolor	30.00
Willmottiae	20.00
Phil. Formosanum	20.00
Amabile	20.00
White Queen	30.00
Princeps	20.00

Cash with order.

J. HENDRIKS, GROWER, Portage, Mich.

IMPORTED TUBEROUS-ROOTED BEGONIAS

All Double Camellia-flowered, large sizes. Very scarce this season due to hot, dry season in Belgium.

All separate colors: Red, pink, salmon, white, copper, orange, scarlet and yellow.

Per 100

Sizes, 1½ to 2½ ins.....	\$ 6.00
Sizes, 2½ to 3 ins.....	10.00
Sizes, 2 ins. up.....	13.50

Cash or C.O.D.

HOWARD STREET PANTRY GARDENS

Kalamazoo 99, Mich.

LILIES

	Per 100	Per 1000
500 Sunset, 5 to 6 ins.....	\$22.50	
700 Sunset, 6 to 7 ins.....	27.00	
10,000 Regal, 5 to 6 ins.....	7.50	\$70.00
1000 Regal, 8 to 10 ins.....	15.00	
1000 Rubrum, 8 to 10 ins.....	45.00	

Cash or C.O.D.

HOWARD STREET PANTRY GARDENS

Kalamazoo 99, Mich.

FANCY-LEAVED CALADIUMS

	Per 100	Per 1000
Mixed varieties, 1 to 1½ ins.....	\$ 7.50	
Mixed varieties, 1½ to 2½ ins.....	11.00	
Mixed varieties, 2½ to 3½ ins.....	16.00	

Cash or C.O.D.

HOWARD STREET PANTRY GARDENS

Kalamazoo 99, Mich.

FORCING and Garden Varieties of HOL-

LAND Tulip, Daffodil, Hyacinth and miscellaneous BULBS, all grown on our own nurseries at SASSENHEIM, HOLLAND. Ask for our prices for Spring delivery. New York address: C. WESTERBECK & SON, 44 Whitehall St., New York, N. Y.

1947 GLADIOLI

Wholesale and retail, listing many choice

varieties and newer introductions.

HI-LO HILL FARM

Lebanon, Ore.

Rt. 3

AMERICAN NURSERYMAN

WRITE FOR GLADIOLUS BULB LIST NOW

Our fall list is now ready for mailing. It covers 33 of the better florist's varieties. Best crop we have ever harvested of good, clean, high-crowned bulbs. Each and every order is inspected by a certified state inspector before leaving our warehouse—this is your protection. Write for list.

QUALITY GLADIOLUS GARDENS

Chester Sirois

St. Anne, Ill.

SINGLE TUBEROSES

Short crop this year, advise ordering early.

Per 100 Per 1000

15,000 Jumbo size, 6 ins. up.....	\$7.00	\$55.00
30,000 First size	5.00	40.00

Cash or C.O.D.

HOWARD STREET PANTRY GARDENS

Kalamazoo 99, Mich.

CUTTING WOOD

HARDWOOD CUTTINGS

Immediate delivery. From our own plantings and blocks. Carefully checked for accuracy. 6½ inches long.

Per 1000

Cornus sibirica	\$ 4.00
flaviramea	5.00
paniculata	4.00
amomum	4.00
elegans	7.00

Dierervilla trifida

5.00

Elder, canadensis

4.00

red berries

5.00

Forsythia intermedia

4.00

spectabilis

4.00

bellis albida

3.00

bella rosea

3.00

mucronata

3.00

tatarica rosea

6.00

korolkowii

6.00

zabelii

6.00

syringantha

6.00

maackii

4.00

hydrangea A. G.

6.00

Lilac, rothomagensis

5.00

Philadelphus, Bouquet Blanc

4.00

Lemone

6.00

grandiflora

3.00

Physocarpus opulifolius aureus

4.00

opulifolius nanus

6.00

Privet, Amur River North

4.00

Regia (true)

1.00

Rosa rugosa Hanmer

12.00

Belle Pottevine

12.00

Sorbaria sorbifolia

4.00

Spiraea billardieri roses

3.00

froebei

4.00

thunbergii

4.00

vanhoultii

4.00

Symphoricarpos racemosus (Snowberry)

4.00

chenaultii

4.00

Viburnum dentatum

5.00

prunifolium

5.00

Poplar, Lombardy

4.00

Willow, Niope Weeping

3.00

Wisconsin

3.00

Golden

4.00

JANUARY 1, 1948

53

JUNIPERS
For Spring Delivery

	Per 100
ADMIRABILIS, blue-green creeper.	\$18.00
6 to 9 ins., X.....	8.00
12 to 15 ins., XX.....	45.00
ANDORRA.	
6 to 9 ins., X.....	18.00
12 to 15 ins., XX.....	45.00
CANAERT.	
grafts, 2½-in. pots.....	50.00
DUNDEE.	
grafts, 2½-in. pots.....	50.00
HETZI.	
6 to 9 ins., X.....	35.00
HILL'S PYRAMIDAL.	
grafts, 2½-in. pots.....	50.00
KOSTER.	
6 to 9 ins., X.....	25.00
PATHFINDER.	
6 to 9 ins., X, cuttings.....	35.00
grafts, 2½-in. pots.....	50.00
PFITZER.	
6 to 9 ins., X.....	20.00
PFITZER, GOLDEN.	
6 to 9 ins., X.....	25.00
ROBINHOOD, new pyramidal scope,	
grafts, 2½-in. pots.....	50.00
5 to 10 ins., XX, field-grown.....	200.00
SAVIN.	
6 to 9 ins., X.....	25.00
VIRGINIANA GLAUCA.	
grafts, 2½-in. pots.....	50.00
VIRGINIANA, PLATTE RIVER.	
6 to 9 ins., X, field-grown.....	8.00
10 to 9 ins., X, field-grown.....	12.00
9 to 12 ins., X, field-grown.....	15.00
15 to 18 ins., XX, field-grown.....	45.00
18 to 24 ins., XX, field-grown.....	60.00
WELCH'S.	
grafts, 2½-in. pots.....	50.00
All our lining-out evergreens are dug bare root, potted and packed in moss. Grafts shipped from pots. Packing and boxing at cost.	
NEBRASKA NURSERIES, INC.	
4815 "O" St. Lincoln 8, Neb.	

CAMELLIAS

TORMEY'S
areGROWERS AND SHIPPERS OF
FINE CAMELLIAS.

THE BEST FROM THE FAR WEST.

Tormey-grown Camellia Plants, from the smallest liner to the largest specimen, will reach full growing vigorously and will continue their vigorous growth uninterrupted, because they are grown in containers and are shipped in paper pots or in the original growing containers with all of the plant roots protected, intact and undisturbed.

TORMEY'S Temple City, Calif.

	Per 1000
Berberis thunbergii, 2-yr. adlgs. T. (field row).....	\$6.00
Berberis thunbergii atropurpurea, 2-yr. adlgs. T (field).....	80.00
Conev. kousa, 4-yr. T. 2 to 2½ ft. (field row).....	300.00
Pieris japonica, 2-yr. T. 4 to 6 ins.	250.00
Taxus cuspidata, spreading, 3-yr. T.	300.00
Taxus cuspidata, spreading, 2-yr. T.	200.00
Taxus cuspidata, upright, 2-yr. adlgs.	150.00
Taxus media hicksii, 3-yr. T.	300.00
Taxus media hicksii, 2-yr. T.	250.00
Thuja occidentalis nigra, 2-yr. T.	250.00
Thuja occidentalis pyramidalis, 2-yr. grafts, 2 to 2½ ft.	500.00
Viburnum dilatatum, 1-yr. adlgs.	45.00
Samples Viburnum dilatatum and Taxus upright on request.	
BOULEVARD NURSERIES, Newport, R. I.	

TRANSPLANTED LINING-OUT EVERGREENS.

	Per 1000	Per 1000
Colo. Blue Spruce, 3 to 6 ins. x. \$7.50		\$65.00
Norway Spruce, 3 to 7 ins. x. 6.50		60.00
White Spruce, 3 to 6 ins. x. 6.00		50.00
Red Spruce, 6 to 18 ins. x. 10.00		85.00
Canadian Hemlock, 6 to 12 ins. x. 15.00		100.00
SEEDLINGS.		
Scots Pine, 4 to 8 ins.	5.00	40.00
Scots Pine, 2 to 4 ins.	3.50	30.00
American Red Pine, 2 to 8 ins.	5.00	40.00
Colo. Blue Spruce, 4 to 10 ins.	7.50	60.00
Douglas Fir, 4 to 10 ins.	7.50	60.00
Douglas Fir, 3 to 6 ins.	4.00	....
Minimum order \$10.00. Cash, please.		
SUNCREST EVERGREEN NURSERIES Johnstown, Pa.		

Pieris japonica, 2-yr. tr. 8 to 12 ins.		
Azalea Alatclarense, 2-yr. tr. 4 to 10 ins.		
Azalea Babeuf, 2-yr. tr. 4 to 10 ins.		
Rhododendron ponticum, grafting size.		
Rhododendron hybrid seedlings, 6 to 10 ins.		
Picea excelsa, grafting size.		
Acer palmatum atropurpureum, seedlings, 2-yr. tr. 6 to 10 ins.		
Thuya (Biota) orientalis, understock, once transplanted, suitable for grafting.		
Samples and prices on application.		
RHODE ISLAND NURSERIES Newport, R. I.		

TAXUS CAPITATA

We have a block of 10,000 upright Taxus that we are now offering for sale. Every plant is a compact, tightly sheared specimen. We will book your order now for the spring of 1948.

Each

1½ to 2 ft.	\$3.25
2 to 2½ ft.	4.00
2½ to 3 ft.	5.00
3 to 3½ ft.	6.50

WOODBURNE CULTURAL NURSERIES, INC.

Office: Jericho Turnpike, New Hyde Park, L. I., N. Y. Phone: Fieldstone 7-2129. Nurseries: Lower Half Hollow Rd., Melville, L. I., N. Y.

EVERGREEN LINERS

We are now booking orders for transplants and rooted cuttings for delivery after Jan. 1. Our cuttings will be fine for potting this winter and for bedding out in early spring. We have 300,000 of the leading varieties, and almost all will be ready for early delivery. Our cuttings will be much earlier than the past spring. Our list is ready now. Write for your copy.

ESHAM'S NURSERIES
Frankford, Del.

RHODODENDRON UNDERSTOCKS

Catawbiense, ponticum, Discolor, twice trpl., 3 yrs.-old, with ball, 6 to 8 ins. strong plants, 30c each. Extra-strong plants, 40c each.

50c, minimum order; crating free; cash with order. F. O. B. Nursery.

RICHARD P. RESSEL
Mulino, Ore.JUNIPERUS VIRGINIANA,
PLATTE RIVER TYPE

Per 100 Per 1000
2 to 4 ins. T. \$3.00 \$25.00
4 to 6 ins. 4.00 50.00
6 to 9 ins. T. \$1.00 7.00 60.00
9 to 12 ins. T. 1.25 10.00 90.00
12 to 15 ins. T. 2.00 16.00 150.00

PLUMFIELD NURSERIES, Fremont, Nebr.

PACHYSANDRA TERMINALIS, hairy v.
rooted cuttings, \$4.00 per 100 and \$35.00 per 1000.

EAST HILL NURSERIES
Chesterland, Ohio

LINING-OUT STOCK

Price list on request.

GIRARD BROS. NURSERY
Geneva, Ohio

HEMLOCKS—RHODODENDRON—KALMIA
AZALEAS

CURTIS NURSERIES Callicoon, N. Y.

FRUIT TREES

We have a good supply of the finest dormant bud peach and apricot trees that we have ever grown to offer the trade this season. Our trees are heavy caliper, straight and well rooted. Also have a good supply of pecan trees in leading varieties. Write for wholesale prices.

COCKRELL'S RIVERSIDE NURSERY
Route 1 Goldthwaite, Texas

Softshell Black Walnut, bears 2nd year. "Coldproof" Fig, bears 1st year. Japanese Persimmon, Blueberry, Satsuma Orange, Chinese and Japanese Chestnut Mahan Pecan, bears 4th year, largest known. Other trees.

NEW DELTA NURSERY

Rt. 4 Jackson, Miss.

We have 60,000 1-yr. Peach Trees, 70,000 June Buds and a complete line of Fruit Trees and Shrubbery. Write for our prices before you buy.

JOPPA NURSERY CO.

Joppa, Ala.

1200 3-year-old Apple Trees, in nursery rows, for \$300.00.

HOME NURSERY Liberal, Mo.

HARDY PLANTS

BLEEDING HEARTS
Immediate delivery.

Selected 5 to 8-eye clumps.

Per 25	Per 100	Per 1000
\$12.50	\$45.00	\$425.00
3 to 5-eye clumps.	\$35.00	\$325.00

LINERS

Per 100 Per 1000

\$8.00 \$75.00

THE FLOWER FARM

East McKeesport 11, Pa.

GYPSOPHILA BRISTOL FAIRY

Immediate delivery.

1-yr. field-grown

Extra-heavy grade

Per 100 Per 1000

\$45.00 \$425.00

No. 1 grade.

\$35.00 \$325.00

THE FLOWER FARM

East McKeesport 11, Pa.

BLEEDING HEARTS (Dicentra spectabilis), strong, select, well grown roots. Each

3 to 5 eye, 10 ins. 30c

5 to 8 eye, 10 ins. 40c

Pot now for Easter blooming.

CASHAR W. EVANS Selbyville, Del.

BLEEDING HEARTS

Per 1000

Dicentra Spectabilis, 3 to 5..... \$40.00

Dicentra Eximia, 3 to 5..... 20.00

Cash with order.

J. HENDRIKS, GROWER, Portage, Mich.

BLEEDING HEARTS

Extra-heavy stock.

5000, 6-eye, adl. up, \$50.00 per 100.

Cash, C.O.D.

HOWARD STREET PANSY GARDENS Kalamazoo 99, Mich.

Send for our list of Hardy Mums out in January, New, Standard and English varieties, including original descriptions and comments.

McINNICH GREENHOUSES St. Joseph, Mo.

HARDY CHRYSANTHEMUMS

2¼-in. potted plants for spring delivery.

40 leading varieties. Write for circular.

FAIRVIEW NURSERY Coon Rapids, Iowa

ROSEBUSHES

ROSEBUSHES—2-year, field-grown plants.

Grow Right — Dug Right — Stored Right —

Packed Right. Proper cultivation, fertilization and dusting insure quality plants. Digging and handling equipment mechanized for efficiency. New completely refrigerated and air-conditioned cold storage insures plants in perfect condition for rush shipments any time. Write for prices and variety list.

C. E. WILSON NURSERIES

Box 1149 Jacksonville, Texas

ROSEBUSHES—True to label. Most complete list offered in East Texas. 2-year, plants, grown right, graded right, packed right.

Prices consistent with quality of stock and service rendered. Better get your order in. There is no overproduction in roses. Wholesale list upon request.

ROSEMONT NURSERIES

D. L. Thompson, Mgr.

Drawer 839 Tyler, Tex.

ROSEBUSHES—wholesale, 2-year-old, field-grown; well balanced variety list; all are scientifically grown, properly cultivated, fertilized and dusted with copper sulphur dust. Write for complete variety and price list.

SOUTHLAND ROSE NURSERIES, Dept. 1, P. O. Box 591, Tyler, Texas.

OHIO HYBRID TEA ROSES 2 yrs. old.

Polyanthus, Triomphe Orleans and Edith Cavell.

Write for prices.

ALEX TOTH

South Ridge Madison, Ohio

SEEDS

SEEDS

Taxus Cupidata We offer new crop direct from Japan. Let us know the quantity you require.

AMERICAN BULB CO.

1335 W. Randolph St.

Chicago 7, Illinois

SEEDS

Juniperus virginiana, Platte River type, berries, 50c per lb. Juniperus virginiana, Platte River type, clean seeds, 90 per cent cut test, \$6.00 per lb. Victoria Rhubarb, seeds, 50c per lb.

PLUMFIELD NURSERIES Fremont, Neb.

OSAGE ORANGE SEEDS

Maclura Aurantiaca or Pomifera; Bois d'Arc.

RAY WICKLIFFE Seneca, Kansas

SHRUBS and TREES

LINING-OUT STOCK

Winter and Spring, 1948

Berberis thunbergii, 1-yr. adlgs.

3 to 6 ins. \$10.00

8 to 9 ins. 20.00

9 to 12 ins. 30.00

Berberis thunbergii atropurpurea, 1-yr. adlgs.

3 to 6 ins. 25.00

6 to 9 ins. 40.00

9 to 12 ins. 65.00

Packing at cost. No charge for packing when cash is sent with order.

GULF STREAM NURSERY, INC.

Wachapreague, Va.

Per 100 Per 1000

BERBERIS THUNBERGII, 2 yr. br. 6 to 9 ins. \$3.50 \$30.00

Seedlings, 9 to 12 ins. 6.00 50.00

Seedlings, 12 to 18 ins. 8.00 75.00

Seedlings, 18 to 24 ins. 11.00 95.00

MULBERRY, SEEDLINGS, 8 to 12 ins. 1.20 10.00

NATIVE PLUM, SEEDLINGS, No. 3 20.00

No. 4 12.50

MULBERRY, SEEDLINGS, 8 to 12 ins. 1.20 10.00

CHINESE ELM Per 100 Per 1000

3 to 4 ft. \$5.50 \$45.00

5 to 6 ft. 3.00 25.00

18 to 24 ins. 2.50 20.00

12 to 18 ins. 2.75 15.00

6 to 12 ins. 1.75 10.00

CLINTON NURSERIES & GREENHOUSES Clinton, Okla.

SHRUBS and TREES—Continued

The following stock was transplanted from 24-in. pots and field-grown:

Abelia Goucher,	Per 100
4 to 6 ins., br.	\$15.00
8 to 12 ins., br.	20.00

Berberis Sargentiana,

4 to 8 ins., br.	15.00
8 to 12 ins., br.	20.00

Cupressus Arizonica (from cut.),

8 to 12 ins.	20.00
12 to 18 ins.	25.00

Elaeagnus Pungens (from cut.),

8 to 12 ins., br.	20.00
12 to 15 ins., br.	25.00

Juniperus fastigata,

4 to 8 ins.	12.50
8 to 12 ins.	15.00
12 to 15 ins.	20.00

Juniperus hibernica (Irish),

6 to 9 ins.	15.00
-------------	-------

Juniperus strictifolia,

Field rooted cut.	20.00
2 1/2-in. pots	12.00
17.50	

Biota aurea nana,

2-in. pots	17.50
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Biota bakeri,

4 to 6 ins.	20.00
6 to 8 ins.	25.00
8 to 12 ins.	30.00
12 to 15 ins.	35.00
2-in. pots	17.50

Biota conspicua aurea,

4 to 6 ins.	20.00
6 to 8 ins.	25.00
8 to 12 ins.	30.00
12 to 15 ins.	35.00
2-in. pots	17.50

Biota orientalis (2-yr., field-grown, trans.),

Field rooted cut.	20.00
12.00	
17.50	

Euonymus japonicus (from cut.),

8 to 12 ins.	15.00
12 to 15 ins.	20.00

Fragaria ananassa (from cut.),

8 to 12 ins.	15.00
12 to 15 ins.	20.00

Gaultheria shallon (from cut.),

8 to 12 ins.	15.00
12 to 15 ins.	20.00

Hedera helix (from cut.),

8 to 12 ins.	15.00
12 to 15 ins.	20.00

Ligustrum lucidum,

6 to 12 ins., br.	25.00
12 to 18 ins., br.	35.00

The following small lots at prices indicated. All one-year, field-grown transplants as above.

Euonymus Jap. variegata.....\$25.00 \$37.50

Euonymus patens.....40. 6.00

Magnolia grandiflora, 12 to 24 ins..17. 12.00

Multicolored Pomegranate,

2 to 3 ft.	15. 5.00
------------	----------

Spiraea vanhouttei, 1-year.....500. 30.00

A. R. North Privet, 1-year.....2500. 45.00

Cal. Privet, 10,000 1-year.....per 1000. 30.00

Ret. plumosa sulphurea,

6 to 12 ins.	140. 40.00
2-yr. seedlings from beds.	

Per 100

Cherry Laurel,

4 to 8 ins.	4.00
8 to 12 ins.	5.00
12 to 15 ins.	6.00

Ligustrum japonicum (cut back, br.),

18 to 24 ins., 2 to 5 br.	20.00
2 to 3 ft., 2 to 5 br.	25.00

Biota orientalis, grafting size.....8.00

Biota conspicua aurea,

4 to 6 ins., Golden	6.00
6 to 8 ins., Golden	8.00
8 to 12 ins., Golden	10.00
12 to 15 ins., Green	5.00
8 to 12 ins., Green	7.00
12 to 15 ins., Green	9.00
15 to 18 ins., Green	12.00

One-year Seedlings

Cupressus Arizonica,

8 to 12 ins.	15.00
12 to 15 ins.	20.00

Ligustrum japonicum,

8 to 12 ins.	6.00
12 to 18 ins.	8.00
18 to 24 ins.	10.00

Biota conspicua aurea,

2 to 5 ins., golden	5.00
2 to 6 ins., green	3.00

PEARSALL & BROSEMER NURSERY & GREENHOUSES

111 Fifth St. Huntsville, Ala.

BERBERIS THUNBERGII
1-yr. sdgs. 9 to 12 ins.

Priced per 1000.

In 1000 lots.....\$25.00

In 5000 lots.....22.50

In 10,000 lots.....20.00

6 to 9 ins.

Deduct \$5.00 per 1000 from above lot prices.

Spring 1948 delivery.

L. P. BRICK NURSERIES

Painesville, Ohio

LINERS—FROM SEED BEDS

Per 1000

Chinese Arborvitae, sdgs., 3 to 6 ins..\$40.00

Chinese Arborvitae, sdgs., 6 to 10 ins..50.00

Red Cedar, sdgs., 3 to 5 ins..50.00

Amur River South Privet, sdgs., 12 to 18 ins.....10.00

No grafting size. Cash, please.

LUKE NURSERY Pauls Valley, Okla.

Each

Ilex opaca mascula, B&B, 4 to 5 ft....\$3.00

Ilex opaca mascula, B&B, 5 to 6 ft....4.00

Ilex opaca mascula, B&B, 6 to 7 ft....5.00

These are well shaped and good-foliated plants.

EURANT NURSERY CO. Durant, Okla.

LILACS, French Hybrids and Standard varieties. \$25.00 per 100, \$225.00 per 1000.

DEERFIELD NURSERIES

Deerfield Street P. O. N. J.

LINING-OUT STOCK—SPRING, 1948

Lining-out stock, as such, may not be scarce next spring, but QUALITY STOCK will be. Order now to assure delivery. All orders promptly acknowledged.

ROOTED CUTTINGS

Strong, healthy sized. Treated with hormone powders to assure excellent roots.

Per 100 Per 1000

Ilex cr. convexa, latifolia and rotundifolia, 6 to 9 ins.....\$ 8.00

Rhei pisifera, pinn. aurea, plumbosa, pinn. and 6 to 9 ins.. 9.00 \$ 85.00

Taxus cuspidata, and brevifolia, 6 to 8 ins.....8.50 80.00

Taxus brevifolia and intermedia, 8 to 10 ins.....10.00 95.00

Taxus cusps., upright.....

 4 to 6 ins.....8.00 75.00

 6 to 8 ins.....10.00 95.00

 8 to 10 ins.....12.00 115.00

10 to 12 ins., select.....15.00 145.00

Taxus cuspidata Vermulenii, media, kelseyi, 6 to 8 ins.. 9.00 85.00

 8 to 10 ins.....11.00 105.00

Thuja occ. globosa novum, nigra, 6 to 9 ins.....9.00 85.00

Thuja occ. pyramidalis, 6 to 9 ins.....10.00 95.00

GRAFTS

We start grafting soon. Assure delivery by ordering now so that we may graft items you order.

Per 100

Acer pal. Burgundy Lace.....\$100.00

Biota aurea nana, 8 to 10 ins.....45.00

Fagus syl. asplenifolia, fastigiata, purpurea, diversa, tri-color, 12 to 16 ins.....65.00

Hamamelis mollis, japonica, "red".....

 Japonica "yellow," 10 to 12 ins.....65.00

Retinospora obtusa gracilis, 6 to 10 ins.....50.00

Rhododendron hybrida, named varieties.....

 8.00

Tsuga can. pyramidalis.....100.00

POTTED STOCK

Per 100 Per 1000

Azalea hinodegiri, 2 1/2-in. pots.....\$13.00 \$125.00

Azalea Hino-Crimson, 2 1/2-in. pots.....20.00 175.00

Ilex cr. convexa, latifolia and rotundifolia, 2 1/2-in. pot.....15.00

Magnolia soulangeana, 2 1/2-in. pot.....

Pieris japonica, 2 1/2-in. pot.....20.00

Viburnum burkwoodi, 2 1/2-in. pot.....20.00

Many other items on our complete list ready for mailing soon. Send for it. Cash with order, please.

JOHN VERMEULEN & SON, INC.

Westbury, L. I., N. Y.

Member, A.A.N.

LINING-OUT STOCK FOR SPRING 1948.

This is our list of Lining-out stock which we have for this coming spring. As you see, our supply is very limited. However, we have better varieties and sizes than last season. These prices are good while stock lasts.

Per 100 Per 1000

500 Abelia grandiflora, heavy, 4-yr. tr., 1 to 1 1/2 ft.....\$23.00 \$175.00

3000 American Arborvitae, bushy, 5-yr. X, 10 to 15 ins. 18.00 140.00

3000 Andorra Juniper, heavy, 3-yr. XX, 8 to 12 ins.....17.00 135.00

150 Bar Harbor Juniper, once tr., 8 to 12 ins.....18.00

1000 Norway Spruce, bushy, 5-yr. XXX, 1 to 1 1/2 ft.....33.00 250.00

1500 Pfitzer Juniper, heavy, 3-yr. XX, 8 ins.....28.00 265.00

The liners listed above are all heavy field-grown and with good healthy root systems.

900 Silver Maple, 3-yr. tr., X, 1 1/2 to 2 ft.....10.00 75.00

500 Red Maple (Acer rubrum), tr., X, 2 to 3 ft.....10.00 75.00

1200 Lombardy Poplar, liners, 1 1/2 to 2 ft.....9.00 75.00

200 Golden Weeping Willow, heavy, tr., 2 to 3 ft.....17.00 125.00

245 Wisconsin Weeping Willow, heavy, tr., 2 to 3 ft.....15.00 120.00

450 Deutzia Pride of Rochester, liners, 3-yr. tr., 1 to 1 1/2 ft.....9.00 80.00

700 Forsythia Fortune, liners, tr., 1 to 1 1/2 ft.....12.00 100.00

9000 Spiraea vanhouttei, heavy, 3-yr. T. X, 1 to 1 1/2 ft. 15.00 125.00

400 Spiraea vanhouttei, extra heavy, br., tr., 1 1/2 to 2 ft.....20.00 185.00

1100 Weigela, br., 3-yr. 13.00 110.00

600 Weigela hendersonii, once tr., br., 12 to 18 ins.....15.00 125.00

These trees and shrubs have been transplanted to open field rows, are heavy rooted, branched and are fully up to grade.

200 or more at 1948 rate. Above prices include packing, and we pay shipping costs for cash with order. Please order now. All stock dug fresh for each order. Generally we can ship anytime after March 15. This sale ends on March 1, 1948.

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BERBERIS THUNBERGII ATROPURPUREA

4 to 6 ins., \$25.00 per 1000

6 to 9 ins., \$35.00 per 1000

SPRINGBROOK GARDENS

Hesley Rd. Painesville, Ohio

Each

Ilex opaca mascula, B&B, 4 to 5 ft....\$3.00

Ilex opaca mascula, B&B, 5 to 6 ft....4.00

Ilex opaca mascula, B&B, 6 to 7 ft....5.00

These are well shaped and good-foliated plants.

EURANT NURSERY CO. Durant, Okla.

LILACS, French Hybrids and Standard varieties. \$25.00 per 100, \$225.00 per 1000.

DEERFIELD NURSERIES

Deerfield Street P. O. N. J.

1700 Paul's Scarlet Cl., No. 1.....25c

700 Paul's Scarlet Cl., No. 2.....15c

1000 Assorted Tea Roses, No. 2.....15c

1270 Spiraea A. Waterer, 24 ins.....25c

675 Spiraea A. Waterer, 18 ins.....20c

WM. M. DIVINEY NURSERIES Geneva, N. Y.

1700 Paul's Scarlet Cl., No. 1.....25c

700 Paul's Scarlet Cl., No. 2.....15c

1000 Assorted Tea Roses, No. 2.....15c

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700 Paul's Scarlet Cl., No. 2.....15c

JANUARY 1, 1948

Each
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Price

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ONE 6-GAL. PER MIN. SPRAYER, 1937.
 Unit consists of 5 hp. Briggs & Stratton air-cooled engine, 6 gpm. Bean Giant Pump, 100 ft. hose, nozzle, refiller, 20 feet suction hose, sprayer gun nozzle.

ONE 14-GAL. PER MIN. HIGH PRESSURE SPRAYER, 1936.

Consisting of 12 h.p. Hercules gasoline water-cooled engine, 16 gpm. Bean Pump with 100 ft. hose, nozzle, refiller and suction hose, 200-gal. 3-compartment steel tank mounted on skids.

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KNOCK-DOWN FLATS
 Made from a good grade of Southern Yellow Pine since Cypress is not available.

Standard specifications, Inside measurements.

16x12x2 1/2% \$16.25 per 100

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22 1/2x15x2 1/2% 22.00 per 100

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All other sizes quoted on request. Prices F.O.B. Birmingham.

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FINE-SCREENED DOMESTIC PEAT.

Acid pH 4-8. Some Nitrogen.

Our peat is excellent for lawns, cold-frames, perennial seedbeds and preparing soil for evergreen and shrubbery plantings.

Per 2-bu. bag

1 to 4 bags \$2.00

5 to 24 bags 1.00

25 to 49 bags95

50 to 100 bags90

Write for prices on bulk carload. We ship same day order is received. Order early.

Cash, please.

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Clean, long-fibered, solidly packed in burlap or wired bales of standard size, direct from drying beds. None better.

Treated when feasible.

WARRENS MOSS CO., Box 7, Warrens, Wis.

GRAFTING TWINE

High-grade cotton twine specially treated with rot-proofing and waxing material. Ideal for all types of grafting. 300-yard skein for \$3.00.

JAMES S. WELLS

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Bins, Cabinets.

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FOR SALE—Roper Post Hole Digger for Ford Ferguson Tractor. 8-in. auger. Perfect condition, \$95.00.

FRANCIS A. ALLEY

Box 1159 Short Hills, N. J.

GIBRALTAR Frost Covers pay for themselves. Economical, long-lasting, ideal for windbreaks. 6 ft. wide, 50 ft. \$13.75; 100 ft. \$20.00; 150 ft. \$39.00. NEW AMSTERDAM IMPORT, 122 Chambers St., New York, N.Y.

WANTED

WANT LIST—Please quote us on any part of the following you can supply: 1,000 each, Mahonia, Grape Holly, American Holly, Tulip; Holleana and Lombardy Poplar; Norway, Rubrum, Schwedleri and Sugar Maple; Cutleaf and European Birch; Pin and Scarlet Oak; American Linden; European Mountain Ash; Gingko; Hackberry; Hawthorne; Calycanthus; Welwelia rosea, Hydrangea P. G. Forsythia; Tamarix; Spiraea billardi, V. H. and A. W.; Lonicera, White and Rubra Dogwood; Euonymus alatus, patens, European and radicans; Cotoneaster; Russian Olive; Rhodotypos kerrioides; Flowering Almond; Beautybush; Buddleia; Smoke Tree; Cornelian Cherry; Flowering Currant, 5,000 each; Viburnum sieboldi, Red and Green Barberry.

EGYPTIAN NURSERY & LANDSCAPE CO.

Farina, Ill.

WANTED

Juniperus pfitzeriana.

We can use large or small quantities of Juniperus pfitzeriana in 2-year bedded cuttings, 10 to 15 ins.

DON'S RAINBOW GARDENS

Orville, Ohio

WANTED TO BUY

58 Larix europaea, occidentalis or leptolepis. Must be 5 to 10 feet tall. Or Pinus nigra or Pinus sylvestris.

PHILIP H. TUNNICLIFF

Landscape Designer

614 Sturdevant St. Davenport, Iowa

NEWSPAPER FEATURES

SOIL FUMIGATION.

An article on soil fumigation as it is practiced at the Behnke Nurseries, Beltsville, Md., was featured in the November 23 edition of the Sunday Star, Washington, D. C. Prepared by Charles E. Garen, the story was accompanied by illustrations of a soil-fumigating device being operated at the Behnke Nurseries and improved rose plants grown from the treated soil.

Albert Behnke, operator of the nurseries, first became interested eight years ago in the possibilities of fumigation for controlling nematodes in his soil when nematologists at the United States Department of Agriculture plant industry station, Beltsville, needed nursery stock for experimental use, and he came to their aid with 5,000 rose seedling understock plants. The experimenters knew the soil was loaded with nematodes which caused root knot, and after many trials, a successful method of extermination was developed, using chloropicrin (tear gas) as a fumigant. Mr. Behnke now has a tractor-drawn applicator and an adapted sprayer to put in the fumigants for his larger plantings and a hand applicator for his small beds.

The chloropicrin kills the weeds and many fungi. Before using fumigation, it cost Mr. Behnke \$16 to weed a bed of pansies, which can now be made weed-free with a \$5 fumigation treatment. From each ounce of seeds he grows 12,000 seedlings from the fumigated bed, while without treatment, between 4,000 and 8,000 only are expected. Seedlings from treated beds also have good root systems and are ready in four weeks instead of six weeks from September planting. Rose seedlings from treated soil have roots that are long, clean, straight, light-colored and vigorous and show almost twice as much growth.

The Behnke Nurseries, which are located at Washington and Baltimore boulevards, consist of eight acres and specialize in roses and conifers.

WISCONSIN MEETING.

[Concluded from page 7.]

by the association's Washington office, and many direct benefits have already been realized.

J. I. E. Ilgenfritz, Monroe, Mich., a member of the A. A. N. executive committee of region 3, spoke briefly on the tremendous value of the association to its members and stressed the increasing importance and influential position of the association among trade groups at Washington.

L. L. Kumlien, of Kumlien's Nursery, Janesville, presented a talk on the nursery industry in Wisconsin, the first portion of which appears in this issue. Following the usual tempo of Mr. Kumlien's philosophy, the talk stressed the importance of small, everyday matters and the vital part they played in any successful business. The theme of his talk centered upon the fact that nurserymen, like everyone else, must "lean with the wind," fitting themselves to the trend of the time instead of trying to oppose the trends. In practical terms this means that when certain types of merchandise are wanted by the public, they are the kinds to grow, and when certain methods of merchandising are most popular, such selling methods are the ones nurserymen should use instead of retaining the old-fashioned methods. It was this inability to change that caused the failure of many nurserymen in the past. Mr. Kumlien also stated that it was imperative to keep the nursery looking well since today customers come to the nursery rather than agents' going to the people. Such a practice pays big dividends. Another thing that is often overlooked, according to Mr. Kumlien, is the fact that the nurseryman must instill confidence in the local people or whom-ever he is selling. Advertising was another important matter cited by Mr. Kumlien, and he pointed out that it was imperative that, while advertising need not be large, it must be consistent and run throughout the year.

Harold Hunziker, secretary of the National Landscape Nurserymen's Association, presented an interesting paper on the value of state and trade associations. He stated that in the old days nurserymen were suspicious of each other and there was little or no cooperation within the industry. However, today, because of association activities, this has all been changed, and instead of suspicion, there is cooperation.

T. C. HOWELL, JR., formerly with the Howell Nursery & Greenbrier Farms, Norfolk, Va., recently opened the Howell Landscape Co. at Liberty, N. C.

BERT W. KEITH, of the Keith Plant Nursery, Sawyer, Mich., was guest speaker at a nursery and landscape class November 18 at Michigan State College, East Lansing. He discussed the origin and purpose of the National Mail Order Nurserymen's Association, of which he has been secretary-treasurer since the founding of the organization in 1934.

COLD STORAGE.

[Concluded from page 12.]

proper voltage is available in the vicinity and if the transformers in the area have enough capacity for the load. Check with city officials on the adequacy of the water supply and the capacity of existing sewers to carry off waste water. When water is unusually hard, it will be necessary to clean the condenser. Accordingly, the condenser must be of a type that is cleanable.

There are two distinct types of cooling equipment. One is the conventional gravity system, using coils suspended from ceiling and walls. The other is the more modern fan or blower type, which roughly resembles an automobile radiator and employs an electric motor-driven fan. Most of the nurserymen reporting stated their preference for the blower type of cooler.

A blower or fan-type cooling unit is much less expensive than pipe coils of equal heat-absorbing capacity. It requires less space and can be installed in a corner out of the way. The employment of a fan induces a much higher rate of heat absorption, which means that fewer pipes are required. Room temperature, relative humidity and air motion are easier to control with the blower system.

It is possible to design a blower cooler system so that outside air can be brought into the storage for the prevention of mold. This same system makes it practical to cool the room without refrigeration when outside temperatures are sufficiently low. In addition to mold prevention, outside air can be brought in for the benefit of occupants of the storage room. The exact requirements for proper ventilation of a nursery storage are not known.

Humidity is another important consideration concerning which little definite information is available. Nursery stock stored too dry will shrivel; stored too wet, it will mold or rot. In cold storages where property packed stock is carried at a temperature of 28 to 30 degrees, the humidity does not seem to be very important. But when the temperature rises above the freezing point, the relative humidity must be kept rather high. The consensus seems to be that eighty-five per cent at 33 to 35 degrees is about right. Given the same amount of moisture in the air, the relative humidity drops rapidly as the temperature rises.

Several types of commercial humidifiers are available. The assembly combines spray nozzles, a fan or blower and baffles to prevent blowing water droplets from the unit. Opera-

HORTICULTURAL PEAT MOSS

98% ORGANIC Matter

WANTED—YOUR 1948 PEAT MOSS BUSINESS

Better equipped than ever to serve you. Fine dry or medium wet grades, packed in 100-pound bags, veneer crates or bulk cars. Samples, analysis and rates furnished on request.

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GEORGIA PEAT MOSS CO., INC.
Lake Park, Ga.

**Those YELLOWING LEAVES may turn GREEN
IF YOU SPRAY THEM WITH**

For chlorosis due to
Iron deficiency.

Does not contain
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4-oz. jar \$1.25
(Makes 1½ gals.)

1-lb. jar \$3.00
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Now available
with Screening
Attachment.
Engineered for
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Prompt delivery.

Write for folder
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Lindig's Mfg. Co.

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tion may be manual or controlled by a humidistat.

Nursery stock stored in a cold-storage room must have its roots well protected to prevent drying out. One nurseryman packs his strawberry, asparagus, phlox and raspberry plants in boxes with dry shavings. He says that the shavings absorb enough moisture from the air to keep the plants in good condition. Others use sphagnum moss for successful storage of strawberry plants and carry them below freezing.

Roses can be packed in boxes with moss or tow to prevent drying out. One grower uses closed bins to prevent too much exposure to air, but

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most nurserymen store on open
shelving to permit free air circula-
tion, which is necessary for proper
cooling. The roots are protected by
liberal use of moss or tow.

[This completes the article on "Cold
Storage," which began in the December
15 issue.]

CLARENCE JACKSON is now
operating Jackson's Orchard & Nurs-
ery, Route 2, Box 178, Three Oaks,
Mich., growing evergreens and small
plants.

THE ANSWER TO EVERY NURSERYMAN'S DREAM!
Once You TRY IT You'll NEVER AGAIN Be Without It

GET THE "FEEL" OF
FAMOUS ➤

VITALOAM
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CONSERVE THAT MOISTURE
PROTECT YOUR PLANTINGS

— Sold in 48 States and Canada —



These Plants looked identical when repotted.
Reputed April 8th — Photo May 7th

The Sweetheart of the Soil

"It rejuvenates the Earth"

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REJUVENATE Your SOIL With "VITALOAM"

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SOIL RESEARCH LABORATORIES, INC.

531 East Main St.

Lancaster, Ohio

PLANT NOTES.

[Continued from page 16.]

through some misunderstanding, and alienata, the final parting of the two men. The early specific names in the genus have mostly been combined or eliminated; so they mean little to us at present, except as a pleasant study. But they do mean much to us as gardeners—much more in fact than most of us think.

Nurserymen do not, as a rule, interest themselves in annuals, but the neighborhood grower could well afford to give some time to the more unusual ones, including browallia. It might not be profitable, or even possible, for them to handle the plants for winter sales, as I have done in the past (some blooming plants in pots in the window garden in early December were the inspiration for this note), but anyone with facilities for bedding plants for spring sales should investigate browallia.

Growing them from seeds is a simple matter. Experience shows that a light soil, preferably on the sandy side, is best. Cover the seeds lightly and water carefully with a fine hose. Prick the tiny seedlings out into thumb pots, still using a light compost, and later transfer them to larger pots. It is always best to use a soil not too rich. When planted out for

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Arborist Tree Wound Dressing is a scientifically prepared waterproof composition for application to tree cavities, wounds or other exposed wood of trees. It contains no coal tar, carbolineum, creosote, nor any material injurious to the cambium layer or the life of the tree.

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And Most Sucking Insects on Evergreens and Ornamentals

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M-E ...FIRST CHOICE BECAUSE IT'S
GUARANTEED
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22% to 51%

Tills, Mulches, Cultivates!

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M-E ROTARY TILLER
Does All This with LESS Work!

Prepares perfect seed bed . . .
increases mineral and moisture content . . . rebuilds soil
Nature's way. M-E makes garden work easier . . . does it better
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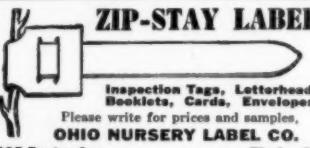
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Feed As You Water
Right to the Roots.

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POULTRY MANURE

100 lbs., in 50-lb. bags, \$2.00; 500 lbs.,
in 50-lb. bags, \$9.00; 1000 lbs., in 50-lb. bags,
\$16.00; 2000 lbs. in 50-lb. bags,
\$25.00.

DIAMOND STATE EVERGREEN CO.
Milton, Del.

summer blooming browallias do better in poor soils than most annuals. If one starts the seeds into growth early in order to have large plants at bedding-out time, it is well to remember to keep them as near the glass as possible; if they are started later in hotbeds, this factor need cause little concern.

Even when we come to specific names we are on questionable footing. Apparently, names of browallia mean little to some seedsmen, for one may find the same kind under half a dozen different names. If true *B. speciosa major* is available, it is still one of the best, with violet-blue flowers as much as two inches across. And the new *B. viscosa* Sapphire, with deep blue flowers and white centers, is a most pleasing kind.

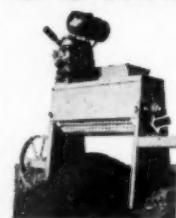
Giant Fennels.

Although not a true fennel, ferula is spoken of in literature as giant fennel, and as such it will probably remain. Mention to the average gardener the name of a ferula plant and no sign of recognition will be apparent, but the sight of a plant is sure to create a desire for possession. In spring the giant fennels commence their spectacular cycle with a sudden outburst of finely-divided leaves, like a giant fern, increasing in stature and breath-taking beauty until the performance culminates in lofty flower stalks (up to twelve feet tall in some species), bearing umbels of small yellow flowers. This makes a most unusual plant and one of many possibilities as a landscape ornament. When seen at all, it is generally as a lawn specimen. That is a good role for the spectacular plant, but a better one, it seems to me, is in groups along a stream bank. In the absence of a stream, bog or pool, it shows off to good advantage in groups at the edge of shrubbery. But it shows off poorly at the back of hardy borders, where its fine foliage is obscured by its neighbors.

All ferulas that I know want a deep rich soil and more moisture than we ordinarily have in the middle west. Because they divide poorly, as do most umbellifers, they should be grown from seeds. And like other umbelliferous plants, seeds should be fresh and planted outdoors in autumn. It takes some time for a ferula to show what it is capable of, several years elapsing before it reaches the height of its glory. Perhaps that is one reason nurserymen are seldom enthusiastic about it.

Since the world has fallen on the evil days of war and its aftermath, few kinds are available. Last year I located seeds of *F. communis* for a client, and that leads one to think it

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Kill mice.
10 Lbs., \$6.00; 25 Lbs., \$11.00;
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SENCO MICRO ARSENIC DUST

Kills rats and mice.
10 Lbs., \$5.00; 25 Lbs., \$9.00.

FREIGHT PREPAID on all orders.

Terms: Check with order or C.O.D.
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PROTECT TREES AND SHRUBS AGAINST RABBITS

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JANUARY 1, 1948

59

will be available again this season. It is one of the better kinds anyway, growing to ten or twelve feet in height when established in fertile soil. And it is also one of the few, excepting an unnamed one that came to me from a Soviet botanic garden in Asia, which are hardy enough for this northern climate.

EVERGREEN EUONYMUS.

[Continued from page 13.]

ed in use to covering ground in small areas or as rock garden plants. They are listed as being sterile, but the larger of them has fruited in this country. However, like its type, it changed its appearance in fruiting and the flowers come on gross shoots totally unlike the thin, tiny-leaved ones.

Aside from the scale problem, the wintercreepers offer no cultural difficulties. All of them root easily from cuttings; being fine-rooted, they can be transplanted at any season during which the ground is open. Sometimes in severe winters their young stems may freeze back or their foliage may get burned, but pruning or the unfolding of new leaf buds takes care of such troubles in spring. All factors considered, it is little wonder that the wintercreeper has become a welcome and useful nursery commodity.

Not all of the available kinds of evergreen euonymus belong to the *E. fortunei* complex. There are several other evergreen or nearly evergreen species, most of which lack the hardiness of the wintercreepers. Notable is *E. japonicus*, which where top hardy, which it is not in most northern gardens, can attain a height of fifteen or twenty feet. Typical plants bear shining foliage, have a fairly close-growing, erect habit of growth and bear pink fruits. Numerous variants have been named, and a number of them are available from southern and west coast growers. Two of these variations are based on size of leaf and are *E. j. macrophyllus*, with relatively large leaves, and *E. j. microphyllus*, with unusually small ones. Another group of varieties involves white or yellow leaf variegations. Still other varieties are distinguished by being low-growing and dense in habit or by being pyramidal or columnar in habit. In warmer sections *Euonymus japonicus* is an extremely attractive broad-leaved evergreen.

Another relatively tender species sometimes offered in the American trade is *Euonymus wilsoni*. This persistent-leaved climber can attain a height of about twenty feet and follows its yellowish flowers with spiny



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fruits, which break open to display yellow fruits.

Another species which falls in this same group is the nearly evergreen Euonymus kiautschovicus, which now has a much more difficult name than the obsolete one of *E. patens*, under which many nurserymen have grown it. Another mix-up in this same connection is that material offered in the American trade under the name of *E. sieboldianus* is doubtless *E. kiautschovicus*. Apparently, the true *E. sieboldianus* is not in cultivation. *Euonymus kiautschovicus* is a flopping, spreading, 10-foot shrub, whose branches may take root upon making contact with the soil. Tumbling over a bank where it is viewed from downgrade, the plant is made attractive by its rounded leaves and the pink and orange-red color combination of its fruits.

PREDICT FERTILIZER PRODUCTION SHORT.

Although nearly double prewar quantities, the supply of commercial fertilizers during the fertilizer year ending June 30 will not be sufficient to meet all the nation's agricultural requirements, the United States Department of Agriculture has announced from information gathered in the department's annual survey of fertilizer prospects.

Compared with last year, there will be about four per cent more nitrogen, five per cent more potash and six per cent more phosphate, but nitrogen will be particularly short of demand and potash will be scarce. Phosphate supplies are expected to be more nearly adequate.

The increase in the commercial production of nitrogen this year over last year will be substantially all in the form of nitrogen solutions. Commercial production of the solid forms of nitrogen is expected to be about the same as last year. Solutions now comprise a little more than one-third of the total commercial output of fertilizer nitrogen in the United States.

While 187,000 tons of nitrogen will be imported to this country from Chile, Canada and Norway, the United States is scheduled to export to some twenty countries about 61,000 tons of commercial nitrogen, leaving a net import total of about 126,000 tons.

The transfer of army ordnance nitrogen-producing factories to commercial operators was urged at Washington before a House of Representatives subcommittee on fertilizers as the fastest and best means of boosting domestic production of nitrogen and nitrogenous fertilizer materials. Mau-

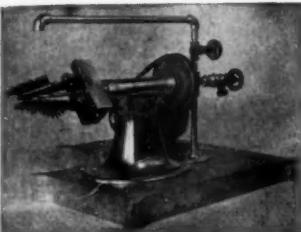
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6 ft.	7.45	35.75	69.50
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return to "full war powers" for nitrogen and nitrogenous fertilizer materials to stop the diversion of nitrogen to industrial uses. Everything short of allocating nitrogen and nitrogenous fertilizer materials for domestic agriculture uses would be done to boost fertilizer output.

At a Senate judiciary committee hearing on the extension of the second war powers act expiring this February, H. B. McCoy, director of the office of materials distribution,

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outlined a proposed program, which includes scheduling of production and set-asides for export to meet expected increased allocation to Europe in 1948-49, boosting domestic production by turning facilities now diverted to making chemicals back to nitrogenous fertilizer production, allocating anhydrous ammonia and other nitrogen compounds to fertilizer producers by diverting them from sources which are using them for industrial purposes and controlling prices on nitrogenous fertilizer materials exports "to keep export prices in line with domestic prices for this material."

Doubt was expressed at London that the theoretical world nitrogen capacity for fertilizer and industrial use of 4,587,000 tons in the 1950-51 fertilizer year based on figures adopted by the Committee of European Economic Co-operation will be achieved.

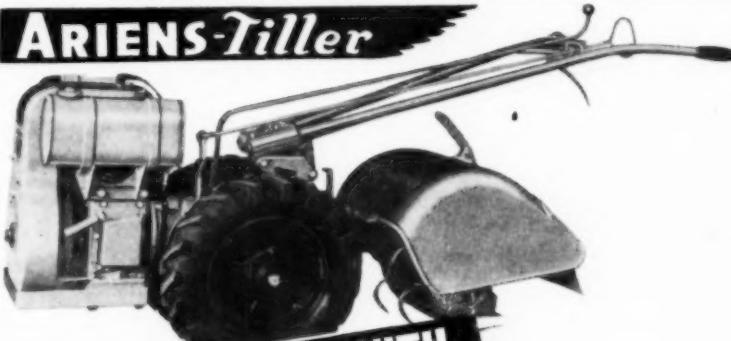
The maximum world production for that year was estimated at 3,987,000 tons by Aikman, Ltd., London, largest factor in British nitrate trade. The firm declared that the committee's estimate of an increase of agricultural consumption of seventy-seven per cent over the next four years appears unduly optimistic and added that even a fifty per cent use increase, a considerable achievement, would still be short of the estimated maximum production.

LEAVES CHEMICAL FIRM.

Franklin D. Jones has left the American Chemical Paint Co., Ambler, Pa., after having served as manager of the agricultural chemicals division. Mr. Jones devoted the past ten years to plant hormones. The department will be continued under the management of G. C. Romig, vice-president of the company.

Mr. Jones for the time being will do consultation work on agricultural chemicals.

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NOTES FROM A NURSERYMAN'S WIFE

The quotation that comes most often to mind when I survey our grounds is, "The cobbler's children go barefoot." This nurseryman's yard has certainly been no model! He planned, he planted—he sat at his desk. He pruned not, neither did he mow his lawn. His children grew and acquired bicycles. Victory gardens came and went.

But now the children are growing up and thinning out. Daughter's swains stay on the sidewalk instead of whooping through the hedge; son's pals make radios at the work-bench instead of wearing paths under the trapeze. Loads of river soil have been hauled in and spread smooth; all the overgrown trees and shrubs have been yanked out. Grass has been sown and raked and fertilized; the sprinkler swishes all day long. The first wash of tender green which spread over the bare soil is becoming bright emerald; the nurseryman's wife runs out every half hour to pull the sprinkler to a dry spot. In spare minutes she shakes weed killer from a big brush on all the dandelion rosettes that appear. Yes, she has a spray gun, but she finds this method gets weeds wetter and is less tiring. The first question our son in college asks is, "How's the grass coming?" Son in high school feels rewarded for his million backaches. Danged if starting again from scratch isn't kind of fun!

* * *

A 15-year-old boy planted a sugar maple tree at Charlevoix, Mich. Through the miracle of modern air express, fresh leaves from this same tree recently decorated the table for his ninetieth birthday at Portland, Ore.

* * *

The tree that grew in Brooklyn, ailanthus, was taken to California after the gold rush by Chinese immigrants, according to Constance Hansen, Lafayette, Cal. It is still found growing around old gold towns. It seems to love California and in some places has become a tree weed. At Walnut Creek, near Oakland, there are areas as large as a city block completely filled with seedlings and suckers of the tree of heaven.

* * *

Old-time Hawaiians say it is bad luck to cut down a coconut tree. A. J. Kimi, head of the grounds committee at the American Legion club-house, knew it, but he did not like

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coconuts' falling on the clubhouse roof nor the trunks' interfering with the view; so he ordered six trees cut down. Since then a honeybee venture, a trial at growing cantaloupes, a goose-farming attempt and even his well established orchids have met disaster. Perhaps if one kahuna (evil spirit) is called down upon him for each of the six trees he had cut down, vengeance will be satisfied—he hopes!

* * *

A garden magazine of the gay 90's has this quaint and charming description of a Puritan's garden.

"My great-grandmother's . . . gar-

den was carpeted with the common knotweed or door grass, *Polygonum aviculare*. Not a spear of any other grass was allowed to grow there and never a weed found entrance to her grass plot. Every morning when the dew was on, her bent form was seen as she trod back and forth many times, pressing the grass firmly with her feet, for she had an idea that this treatment caused the verdure to be thick, matted and short.

"This unique lawn was unbroken but by the path from the little gate to the door, and a very large and luxuriant clump of the old-fashioned ribbon grass which was grown to form a perfect circle.

"This yard was bordered on all sides with currant bushes planted by the low fence. Little sentinels, they stood in methodical precision, each the same height, shape and size; being carefully pruned and trained to grow as miniature trees. They were really beautiful, especially when loaded with the drooping clusters of scarlet fruit. . . . In these days of peace and prosperity is it any more than right that we should give a thought, occasionally, to our rugged forefathers, who gave the best of their lives—those lives so barren of luxury and leisure—to clear the way for our freedom and prosperity? Little time, indeed, could they have found in which to care for such elaborate gardens as grace our country today. No, too severely pressed life's sterner duties!"

* * *

Deanna Durbin has carried out a nice idea in planting all the flowering plants she received at the hospital when her daughter was born. "Jessica's garden," she calls it.

* * *

Because Britain's forests were denuded during war years, there is a plan afoot to secure 5,000,000 acres of woodlands within fifty years. The work has begun with fifty tree experts, who are recording every type of tree, its condition, age and an estimate of its rate of growth. This job alone will take two years.

* * *

Our part of the country experienced beautiful autumn weather the past season. One local savant says that this was not Indian summer, however. True Indian summer, he says, is the warm but hazy weather which comes after a killing frost.

Many explanations have been given for the term. Indians predicted such a season, says one. Indian fires caused the peculiar smokiness of the air, says another. Rev. James Freeman in 1812 wrote: "This charming season is



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This new and latest rocker-type mover, in either the small or large size—the result of twenty years' tree-moving experience, will pay for itself and more in any one planting season and will serve you for many profitable years thereafter.

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Handles the largest trees with same speed and ease as smaller trees. Faster and safer loading and planting—high-riding tops eliminate traffic hazards and cut down costs on long hauls, thus increasing the radial scope of planting activities.

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No. 1—for most softwood and easy items.

1 3/4 oz., 50c; 1 lb., \$3.00.

No. 2—for more difficult subjects.

1 3/4 oz., 75c; 1 lb., \$4.50.

No. 3—for all hardwood and the most difficult subjects.

1 oz., \$1.00; 1/2-lb., \$4.50.

Combination Package: Contains generous sample of all three powders, 75c.

HORMO ROOT

Root-producing powder combined with fungicide to protect against rot while in the rooting medium.

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2 oz., \$1.00; 1/2 lb., \$2.75; 1 lb., \$5.00.

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Horticultural PEAT MOSS
Finely Granulated
High Absorbency



called the Indian summer, a name which is caused by a wind which comes immediately from the court of their great and benevolent god, Cautanowwit, or the southwestern god."

Bradbury in 1817, Daddridge in 1824, Longfellow, Holmes, Lowell and many, many others have felt the something mystic in "the real summer briefly reborn."

About twenty-five years ago the Head of the House sent the girl he was courting (me) a copy of the famous cartoon strip by McCutcheon, I think, which has been reprinted many times. Looking out over shocks of corn at evening the old man tells the little boy that they are shades of Indian tepees and the haze is smoke from their campfires.

Victor Herbert wrote a mighty pretty tune he called "Indian Summer," too.

* * *

Salt Lake City, Utah, has a "marmalade district," where the streets are named Almond, Peach, Quince and Apricot.

* * *

A man named Phil E. Zimmerman, Topeka, Kan., is a spiritual descendant of Johnnie Appleseed. He distributes, not apple seeds, but flower seeds, which he gives away. His generosity has made him known in many parts of the world. He loves his own garden, which has given him health and happiness, and delights in being known simply as "the man who gives away flower seeds." Some of his flowers are growing in every continent except Australia. By this time he may have some growing there!

1948 ALL-AMERICA FLOWERS AND VEGETABLES.

All-America Selections for 1948 include three awards for flowers and seven awards for vegetables. The testing program for the selection requires that plants be grown during a 2-year period before introduction in official test gardens located in various sections of the United States and Canada to represent the various geographic, climatic and soil sections of the two countries.

Flowers receiving awards included a cosmos, a hybrid petunia and a marigold. They were voted superior in comparison to the best of their kinds by twenty-one judges who observed the flowers during their entire season.

A silver medal was awarded to Radiance cosmos, the first bicolored giant cosmos. A native of India, it was combined with the earlier All-America winning Giant and early-



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3-oz. can	25¢—packed 36 to case—wt. 12 lbs.
7-oz. can	50¢—packed 24 to case—wt. 14 lbs.
1-lb. can	\$1.00—packed 12 to case—wt. 16 lbs.
10-lb. drum	\$8—\$25 lbs.	\$15—\$50 lbs. \$25—\$100 lbs. \$40

Commercial growers and dealers receive 33-1/3% discount from the above retail prices.

BUY HYPONEX from your jobber or send \$1 for 1 lb. (makes 100 gallons). \$1 credited on first order for 1 drum or case.

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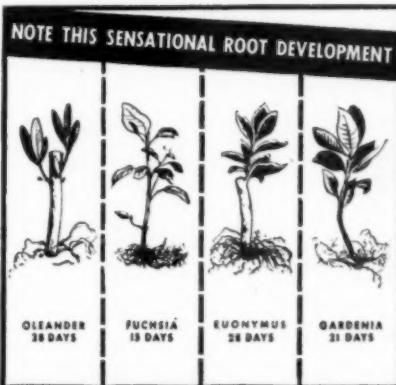
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THE C. B. NURSERY, specializing in azalea and camellia pot plants, was recently opened at 1552 Van Loan street, Shreveport, La., by C. J. Brocato.

CONSTRUCTION has been started on five new greenhouses and a modern 20x60-foot refrigerator plant at Germain's Valley Nursery, Van Nuys, Cal. A large lath house has just been completed by the nursery to hold dormant stock.

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Poles

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Blades



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Saves time and labor. Bands are removed without cutting; therefore the dirt ball and roots are not disturbed . . .

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M-370: holds twelve 1 1/4-inch Bands	\$2.95
M-390: holds twelve 2-inch Bands	3.30
M-392: holds twelve 2 1/2-inch Bands	3.95
M-393: holds six 3-inch Bands	3.85
M-394: holds six 4-inch Bands	4.25

Packed 100 to the carton. We do not break cartons. Shipped promptly from the factory in Michigan.

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IT COSTS NO MORE (and in most instances less) FOR OUR PACKING OF Nursery Burlap Squares and Rolls

Write for prices and samples.

L. ATKIN'S SONS
P. O. Box 167 Rochester, N. Y.

WOOD LABELS

For Nurserymen

**DAYTON
FRUIT TREE LABEL
CO.**

Ray and Kiser Sts. DAYTON, O.

BAMBOO CANES RAFFIA — BULBS

McHUTCHISON & CO.
92 Chambers St. New York 7, N. Y.

CATALOGS RECEIVED.

Sherwood Nursery Co., Portland, Ore.—Wholesale catalog of evergreens, shrubs and rock plants, 32 pages and cover, 5 1/2 x 8 inches.

Somerset Rose Nursery, Inc., New Brunswick, N. J.—Wholesale illustrated catalog of chrysanthemum and carnation cuttings, 32 pages, 6x9 inches.

T. G. Owen & Son, Columbus, Miss.—Wholesale price list of ornamental evergreens, specimen grades and lining-out stock, 20 pages and cover, 3 3/4 x 9 inches.

Couch Bros. Nursery Co., McMinnville, Tenn.—Wholesale price list of fruit trees, shrubs, ornamental and shade trees, 24 pages and cover, 3 3/4 x 8 1/2 inches.

M. Herb, Naples, Italy.—Wholesale catalog of seeds, 40 pages and cover, 6x9 inches.

Hallwell Seed Co., San Francisco, Cal.—Wholesale illustrated catalog of flower seeds, 20 pages, 8 1/2 x 11 inches.

C. F. Wassenberg, Van Wert, O.—Wholesale trade list of peonies, irises and hemerocallis, 4 pages, 8 1/2 x 14 inches.

Cunningham Gardens, Waldron, Ind.—Wholesale list of chrysanthemums and phlox, 6 pages, 5 1/2 x 9 inches. Folder of chrysanthemums, phlox, delphinium and perennials, illustrated in color, 6 pages, 9x11 inches.

Rich & Sons Nursery, Hillsboro, Ore.—Illustrated wholesale list of fruit and nut trees, shrubbery and flowers, 24 pages and cover, 6x9 inches.

Siebenthaler Co., Dayton, O.—Retail price list of trees, shrubs, vines, perennials and roses, 72 pages and cover, 4 7/8 x 7 3/8 inches.

Waynesboro Nurseries, Waynesboro, Va.—Retail catalog, illustrated in color, of fruit, nuts, shrubs, trees and flowers, 48 pages, 8x11 inches.

Neosho Nurseries Co., Neosho, Mo.—Retail catalog, illustrated in color, of fruits, nuts, roses, shrubs and trees, 40 pages, 7 1/2 x 11 inches.

Columbia & Okanogan Nursery Co., Wenatchee, Wash.—Retail price list of fruit, trees and shrubs, 24 pages and cover, 4x9 1/4 inches.

Brentwood Berry Gardens, Los Angeles, Cal.—Illustrated retail price list of berry plants, 20 pages, 5 5/8 x 8 1/2 inches.

Sherman Nursery Co., Charles City, Ia.—Retail catalog, illustrated in color, of fruit, trees, shrubs and flowers, 16 pages, 7 1/2 x 10 1/2 inches.

W. Atlee Burpee Co., Philadelphia, Pa.—Seed catalog, illustrated partly in color, of flowers and vegetables, also plant foods and insecticides, 128 pages and cover, 6 3/4 x 9 1/2 inches.

FORMERLY associated with the Greenbrier Farms, Norfolk, Va., Thomas and Louis Howell are joining their father, who has been a nurseryman for many years, in a new nursery business at South Boston, Va.

CHARLES B. STATON has organized the Possum Hollow Nurseries, 6327 Magnolia street, Philadelphia, Pa., doing landscape designing and planting, tree surgery and road construction. A retail nursery will be developed in conjunction with the business.

We Recommend Our

OPEN MESH COTTON NURSERY SQUARES

which have rendered complete satisfaction for many years to the LEADING NURSERYMEN throughout the UNITED STATES and CANADA. Why not try them?

NEW 10-OZ. BURLAP WITH ASPHALTED PAPER ATTACHED.

38 inches wide—200-yard rolls. For Winter Protection.

IMMEDIATE OR FIRST QUARTER, 1948 DELIVERY

Samples and Prices Gladly Furnished upon Request.

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THE BENJAMIN CHASE COMPANY DERRY, N. H.

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Burlap and Cotton
NURSERY SQUARES
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Knives — Pruning Tools
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GARDNER'S NURSERIES

Rocky Hill, Conn.

Our nurseries are located at Rocky Hill and Cromwell, on the state highway between Hartford and Middletown. See signs. 300 acres of choice young trees and hedge plants that have been properly root-pruned and sheared.

We have listed only the items we can furnish by the carload. Many other desirable items not listed invite your inspection.

Stock is guaranteed satisfactory, but we cannot consider claims after five days. We solicit your patronage and cordially invite you to visit us at any time.

Terms and conditions adopted by American Association of Nurserymen. 2 per cent, 10 days; 30 days net.

★BERBERIS THUNBERGII.

Barberry.	Per 1000
2-yr. untr.	
10 to 12 ins.....	\$ 40.00
12 to 15 ins.....	60.00
15 to 18 ins.....	80.00
18 to 24 ins.....	100.00
Write for prices on 10,000 and up.	

★BERBERIS THUNBERGII.

Barberry.	Per 100	Per 1000
2-yr. trans.		
15 to 18 ins.....	\$20.00	\$150.00
18 to 24 ins.....	25.00	200.00

BERBERIS ATROPURPUREA.

Red Barberry.		
4 to 8 ins., liners.....		40.00
1-yr. seedlings,		
6 to 10 ins., all 3 br.		
and up	20.00	100.00
Write for prices on 10,000 and up.		

★LIGustrum OVALIFOLIUM.

California Privet.		
2-yr. extra-heavy,		
18 to 24 ins.....	10.00	60.00
2 to 3 ft.....	12.00	80.00
3 to 4 ft.....	16.00	120.00
Write for prices on 10,000 and up.		

★TSUGA CANADENSIS.

SPECIMENS.	10	100
	rate	rate
Canadian Hemlock.		
30 to 36 ins. B&B, heavy.	\$3.10	\$3.00
3 to 4 ft., B&B, heavy....	4.10	4.00

JUN. CHINENSIS PFITZERIANA.

Pfitzer Juniper.	10	100
	rate	rate
★18 to 24 ins., B&B.....	\$2.10	\$2.00
2 to 3 ft., B&B.....	2.60	2.50

JUN. EXCELSA STRICTA.

Greek Juniper.	10	100
	rate	rate
★18 to 24 ins., B&B.....	1.60	1.50
24 to 30 ins., B&B.....	2.10	2.00

JUN. C. HIBERNICA.

Irish Juniper.	10	100
	rate	rate
5 ft., B&B.....	1.60	1.50

JUN. SQUAMATA MEYERI.

Meyer's Juniper.	10	100
	rate	rate
18 to 24 ins., B&B.....	2.60	2.50

THUJA OCCIDENTALIS PYRAMIDALIS.

Pyramidal Arborvitae.	10	100
	rate	rate
4 to 5 ft., B&B.....	3.10	3.00
5 to 6 ft., B&B.....	3.60	3.50
6 to 7 ft., B&B.....	4.10	4.00

THUJA OCCIDENTALIS.

★American Arborvitae.	10	100
	rate	rate
2½ to 3 ft., B&B.....	1.60	1.50
3 to 4 ft., B&B.....	2.10	2.00
4 to 5 ft., B&B.....	3.10	3.00

THUJA OCCIDENTALIS GLOBOSEA.

★Globe Arborvitae	10	100
	rate	rate
18 to 24 ins., B&B.....	1.30	1.20
24 to 30 ins., B&B.....	1.50	1.40

TAXUS CUSPIDATA CAPITATA.

★Upright Yew.	10	100
	rate	rate
24 ins., B&B.....	4.10	4.00
30 ins., B&B.....	5.10	5.00
36 ins., B&B.....	6.10	6.00

TAXUS CUSPIDATA.

Spreading Yew.	10	100
	rate	rate
★18 to 24 ins., B&B.....	\$3.10	\$3.00
24 to 30 ins., B&B.....	4.10	4.00

TAXUS HICKSI.

Hicks Yew.	10	100
	rate	rate
30 ins.....		

★TAXUS INTERMEDIA.

15 to 18 ins.	10	100
	rate	rate

RETINOSPORA PLUMOSA.

Plumosa.	10	100
	rate	rate
18 to 24 ins., B&B.....	2.10	2.00
24 to 30 ins., B&B.....	2.60	2.50
30 to 36 ins., B&B.....	3.10	3.00

MUGHO PINE.

18 to 24 ins., B&B.....	10	100
	rate	rate

★ACER PLATANOIDES.

Norway Maple.	10	100
	rate	rate
2-in., 8 to 10 ft.....	5.10	5.00

★ACER PLAT. SCHWEDELRI.

Schwedler Maple.	10	100
	rate	rate
2-in., 8 to 10 ft.....	6.10	6.00

★EUROPEAN MT. ASH.

2½-in.	10	100
	rate	rate

All evergreens B&B at list prices.
Dig your own at 20c less per tree.
No boxing.

Deliveries—full truckload and carload only, or call for your own stock. We will box 2-yr. Berry only during January and February.

* All Items starred * can be certified for western shipment.

HAPPY NEW YEAR

The D. Hill Nursery Company wishes to express sincere appreciation to all of its many friends for their patronage extended throughout this past year, and in doing so, also wishes to convey the hope of a Very Happy and Prosperous 1948 to all.

Our representatives will be looking forward to seeing all of you at the winter meetings.

D. HILL NURSERY COMPANY

Evergreen Specialists

:-: DUNDEE, ILLINOIS

Largest Growers In America